Audio Editing User Guide

This manual is revision B

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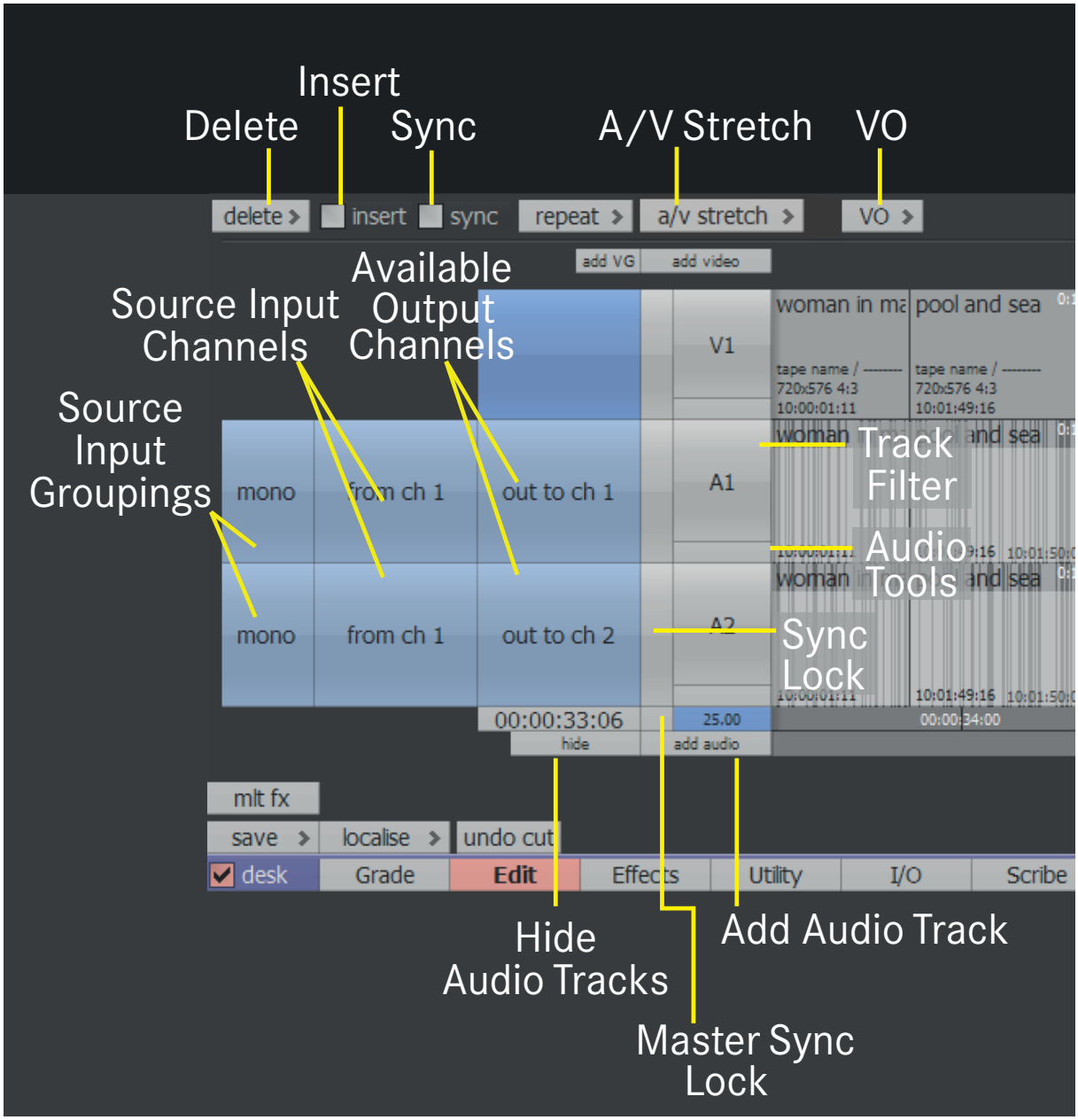
Introduction to Audio

Introduction



When the Edit Application is first opened, the timeline (by default) contains 2 virtual audio tracks and one video track.

Depending on the Quantel product being used, up to 16 audio tracks can be available on the timeline. Standalone workstations with AVIO3 or eVidIO cards support 16 channels. sQ workstations support a maximum of 8 channels (ie the maximum that the sQ Server supports). Mono, stereo and quad audio is supported within a single track.

Output channels can be selected using the audio channel output boxes. When a finished edit is published to a server the audio is mixed down, ready to play out of the assigned ports.

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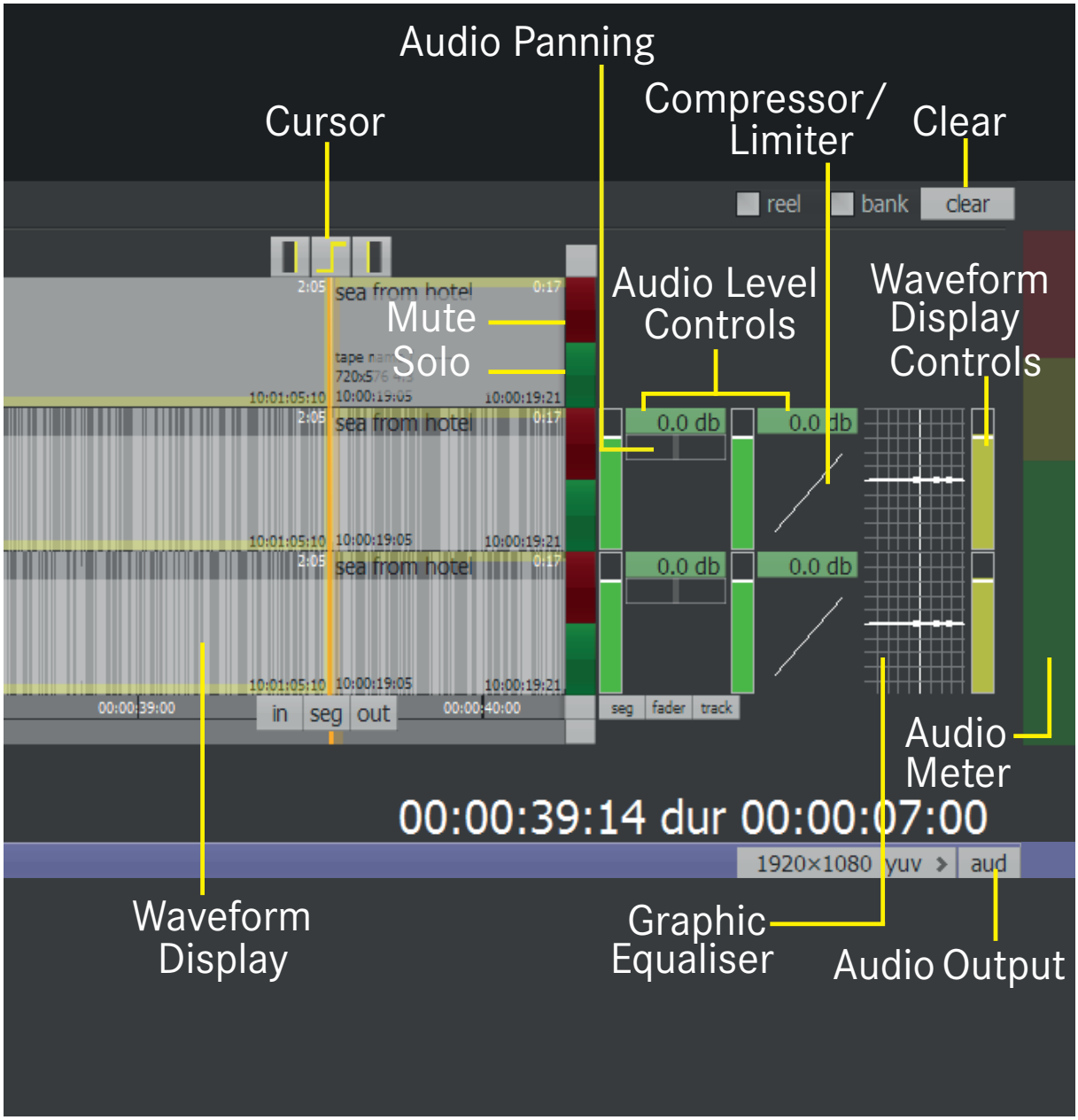
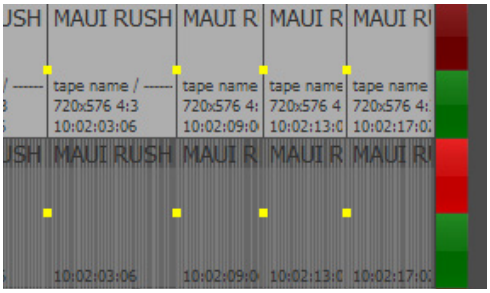


Each audio track is fully editable using the timeline. There are tools to assign audio input and output, control audio levels, compression levels, add audio transitions and much more.

This guide provides information on different aspects of managing and editing audio within the Quantel software. For general information about the interface, using the timeline and overall video editing see the Desktop Editing User Guide or the Timeline Editing User Guide.

Managing Audio Output

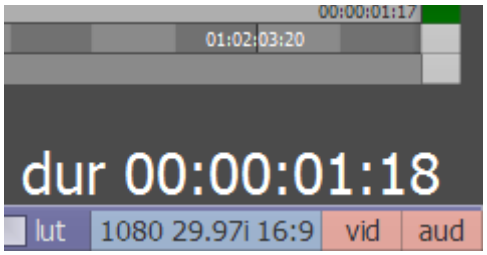
Muting and Soloing Audio Tracks



The Mute and Solo boxes are located to the right of each timeline track. The Mute boxes (red) are used to mute specific tracks so that they are not included in the overall output. The Solo boxes (green) specify a single track to be monitored. The Mute and Solo boxes do not affect the video or audio if the clip is saved or published.

Multiple tracks can be muted at any one time. Only one track can be soloed at any one time.

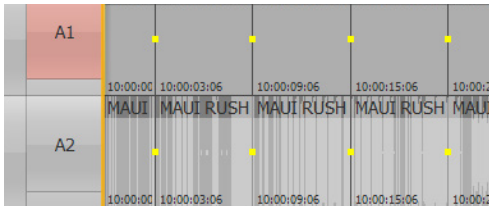
Enabling and Disabling Audio Output



At the bottom-right of the Application Bar there is an **aud** box. This controls the audio output. If the **aud** box is enabled, it highlights pink and audio is output to external speakers. To enable/disable the audio output, simply click on the **vid** and/or **aud** box. Enabling or disabling the **aud** box does not affect the audio if the clip is saved, played-out or published.

If the audio is disabled using the 'aud' box, the audio meter at the end of the timeline is not visible.

Enabling & Disabling Audio Track Boxes



Click on the Track Filter boxes (**A1**, **A2** etc) to enable or disable tracks. Only enabled tracks (highlighted pink) are affected when any subsequent adjustments are made to the timeline or any processes are applied. Any disabled tracks remain unaffected.

This is useful when performing video-only or audio-only editing. The Track Filter boxes do not affect the video or audio if the clip is saved or published.

If none of the tracks have been selected, any process that is applied affects all the tracks..

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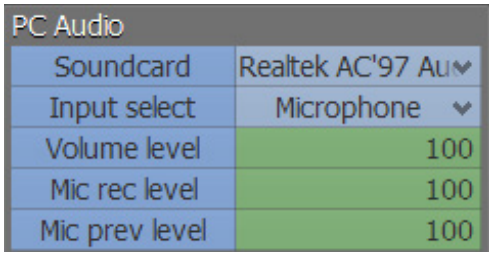
PC Audio Settings

The <F1> Configuration Window includes a number of PC audio setting controls.



The **PC Audio** menu is used to set up the sound blaster card for voice-overs and FX loop purposes. To access these tools press <F1> and navigate to the **PC Audio** section.

In order to record a voice-over, a microphone must be connected to the Mic-In input jack and **Microphone** should be selected from the blue **Input select** scroll box. Before recording a voice-over, adjust the **Volume level** and check that the **Mic rec level** (record) and **Mic prev level** are set to the required level.

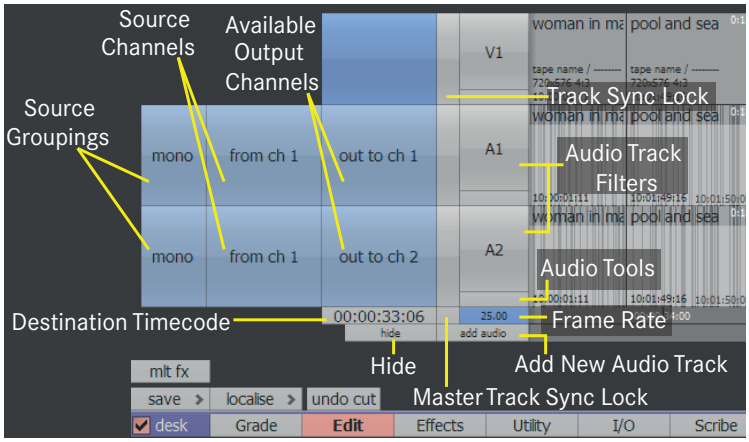
If no microphone is connected then the 'VO' box does not appear on the Edit timeline.

Hidden Audio Options

Many of the audio management tools are located in 'hidden' menus. There are two hidden menus available on the timeline that allow audio levels to be controlled and channels settings to be assigned.

Access Audio Channel Controls (Left Hidden Menu)

To access the audio channel controls, do the following:



1. Click, hold and drag any of the Track Filter boxes (eg **V1**, **A1** etc) to the right. This reveals audio input/output controls as well as a number of other useful tools.
2. Click and drag to the left to hide the menu again.

The following audio tools can be found by accessing the left hidden menu:

Audio Source Groupings

The Source Groupings scroll box displays the input source grouping of the clip, eg **mono**, **stereo**, **quad** etc. This can be changed (where available) by scrolling to a new grouping. This setting applies to the whole track unless a segment has been selected by double clicking on it.

Audio Source Channels

The Source Channels scroll box specifies which source channels are used. This setting applies to the whole track unless a segment has been selected by double clicking on it.

Audio Output Channels

The Output Channels scroll box specifies which output channel(s) each track is set to.

See "Managing Audio Channels" on page 2-8 for more information on using these features.

Hide

The **hide** box temporarily 'hides' the audio tracks as well as all audio tools and controls.

See "Hide" on page 1-9 for more information about this feature.

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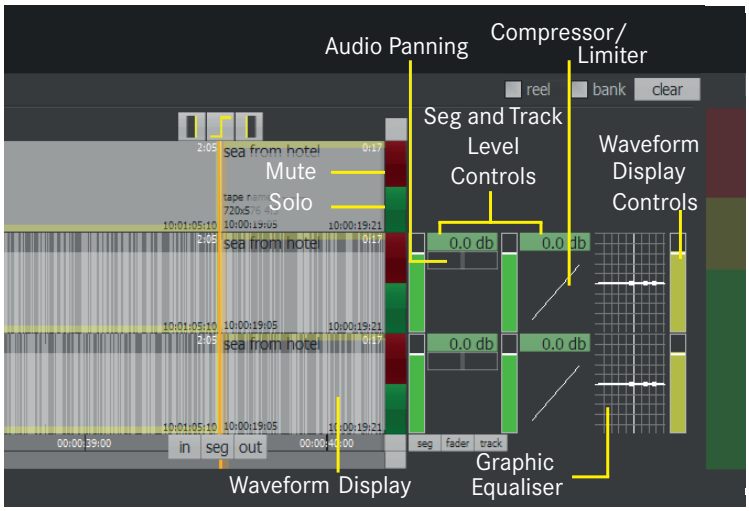
Access Audio Level Controls (Right Hidden Menu)

To access the audio level controls, do the following:



1. Click, hold and drag any of the Mute/Solo boxes to the right of the timeline and drag to the left to reveal the menu.
2. Click and drag to the right to hide the menu again.

Each audio track has its own set of audio controls. The functions of these controls are as follows:

Segment and Track Levels

The Segment and Track Level bars increase or decreases the level of the audio per segment or per track.

See “Managing Audio Levels” on page 2-11 for more details about setting segment and track levels.

Waveform Display

The Waveform Display bar adjusts the size of the audio waveform display on the audio track. Adjusting the waveform display does not affect the output levels.

See “Audio Waveform Display” on page 1-8 for information about how to use the waveform display.

Compressor/Limiter

The compressor provides a form of automatic level control. Limiting is an extreme form of compression, where the output signal is limited at a particular level.

See “Audio Compressor/Limiter” on page 3-18 for information about how to use the Compressor/Limiter tool.

Equalizer

This three band graphic equaliser is provided for each audio track and allows accurate adjustments to be made to the audio.

See “Graphic Equaliser” on page 3-20 for more information about how to use the equaliser tool.

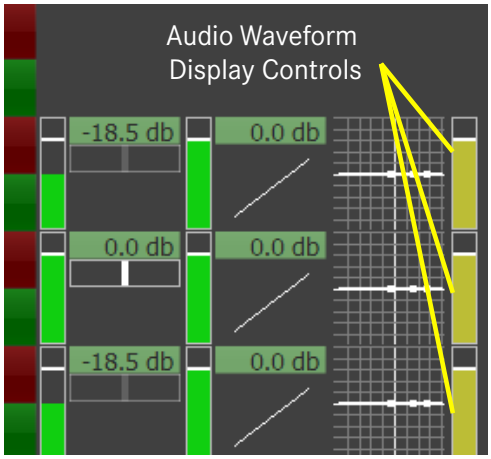
Audio Waveform Display

The audio waveform display can be used to accurately evaluate the audio track between video frame boundaries.

How to Access the Waveform Display Controls

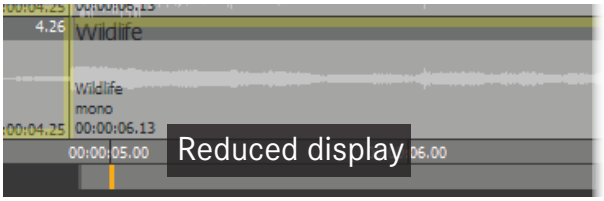
The controls for the waveform display are located in the hidden menu to the right of the timeline.

See "Access Audio Level Controls (Right Hidden Menu)" on page 1-7 for instructions on how to access these controls.



The Waveform Display Controls can be used to adjust the scale of the waveform display on the audio tracks.

To adjust the scale of the waveform display, click and drag up or down on the scale bars. Drag up to increase the vertical scale of the waveform display on the associated track. Drag down to decrease the vertical scale of the waveform display.



On server held clips, the waveform only displays after the clip has been locally cached, ie played through once. Purging the cache (<F12>) removes the waveform until the clip has been played through again.

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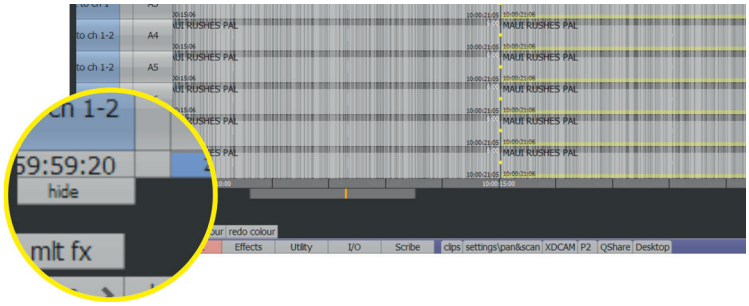
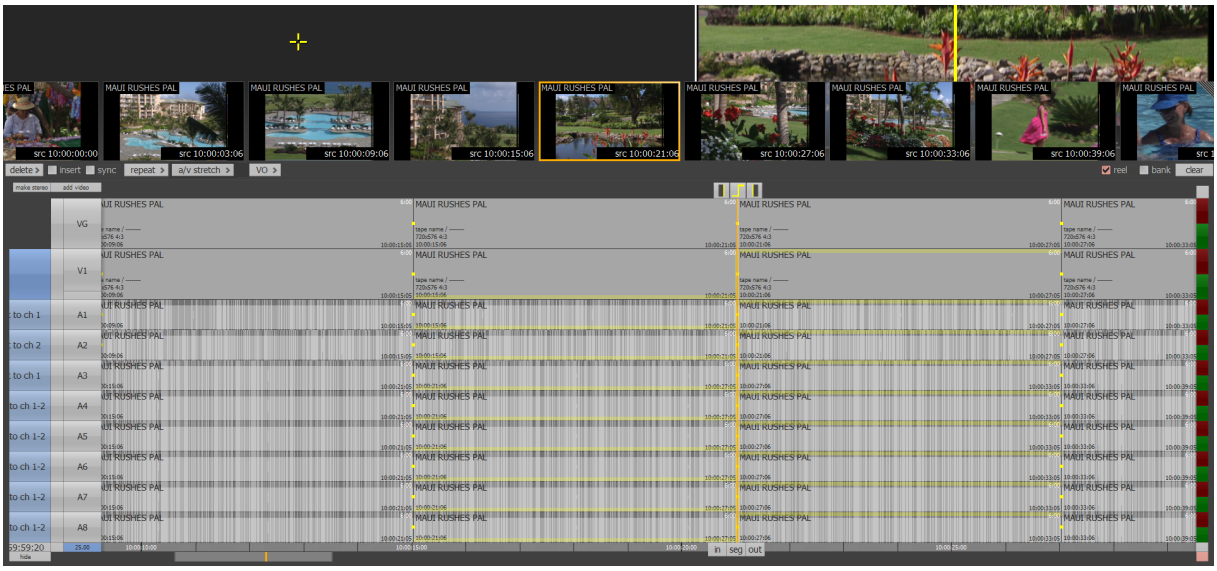
Hide

See “Access Audio Channel Controls (Left Hidden Menu)” on page 1-6 for instructions on how to access the ‘hide’ box.

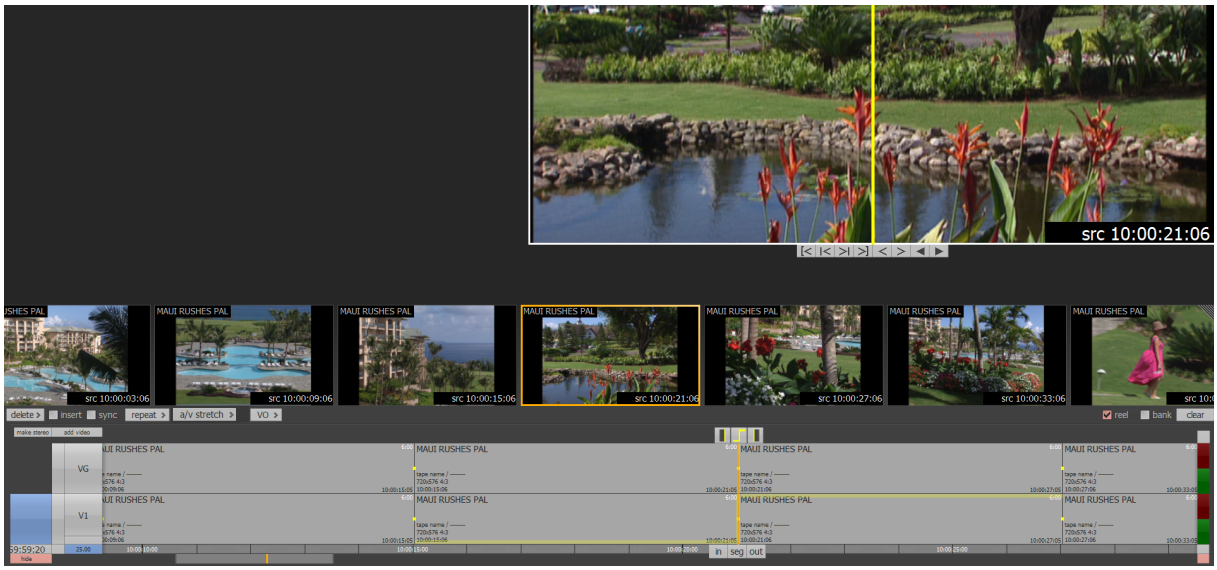


The **hide** box temporarily ‘hides’ the audio tracks as well as all audio tools and controls. Hiding the audio tracks can be a useful way to temporarily create more space on the interface in order to focus on video editing.

For example, this is a typical interface with multiple audio tracks, a single video track, a video guide track and the Reel open. Without the **hide** box enabled, the interface may become crowded:



With **hide** enabled, the audio tracks are temporarily hidden from the interface, creating a less crowded workspace:



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Managing Audio

Adding Audio to the Timeline

Clips can be placed on the timeline in a number of ways depending on user preference and workflow. Whole clips can be added (ie video and audio) or it is possible to select specific tracks to be added (eg just audio tracks). Whole tracks, individual segments, multiple segments or marked sections of tracks can all be added to the timeline.

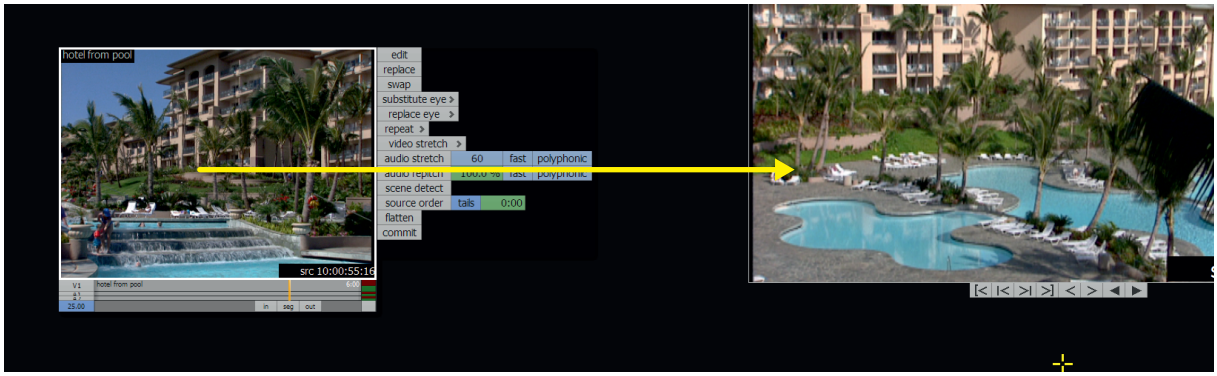
To load a specific track, first ensure that the correct track filter box has been selected. For example, to add a single audio track from a Floating Clip to the timeline, select the relevant track filter box on the Floating Clip. To place the new track onto a specific track on the timeline, eg **A2**, select the **A2** track filter on the timeline.

Multiple clips can be added to the timeline by pressing the <Ctrl> or <Shift> keys to select the required clips, or by drawing a lasso around them, and then dragging and dropping the selection onto the timeline in any of the following ways.

When adding a clip to the timeline, be aware of the cursor position. The cursor position on the new clip determines which frames are added to the timeline. The cursors position on the timeline determines where the new frames are added. For example, if the whole clip needs to be added, ensure that the cursor is positioned at the start of the clip as only frames AFTER the cursor are added to the timeline. If the new clip needs to start at the beginning of the timeline, ensure that the timeline cursor is at the beginning.

To add a clip onto the timeline choose the most suitable option from the following:

Using the Edit Window



Clips can be dragged directly from a bin or from the desktop and dropped onto the Edit Window to load the clip on the timeline at the current cursor position. Hover the clip over the Edit Window before letting go to see a preview on the timeline of where the clip will be placed.

If an edit already exists on the timeline the new clip overwrites any existing frames that are overlapped. Most editors prefer to use this method.

Using the Timeline Tracks

Clips can be dragged and dropped directly onto the timeline. A yellow highlight indicates where the clip will be placed and which tracks it will occupy. If an edit already exists on the timeline, the new clip overwrites any frames that it overlaps.

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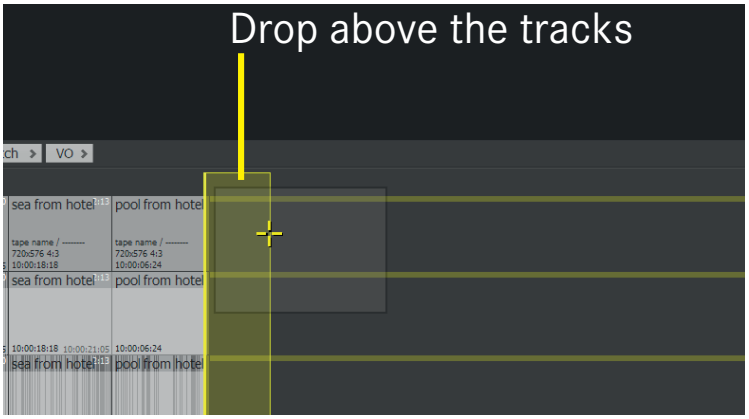
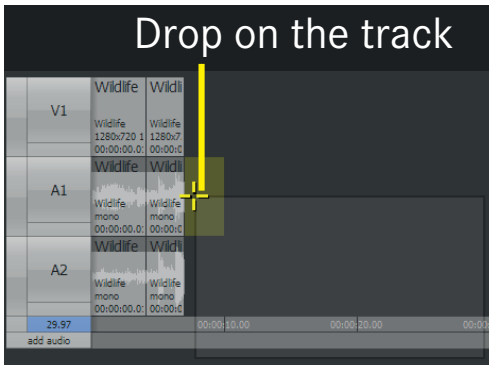
To Insert ALL Video and Audio Tracks



Dragging a clip and hovering in the dark grey area directly ABOVE the video track ensures all video and audio tracks are transferred to the timeline.

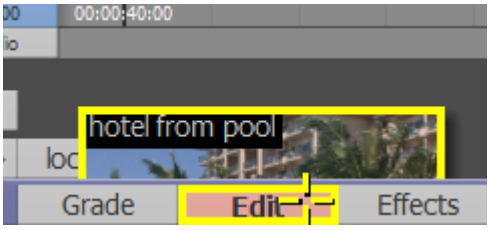
When the clip is hovered above the video track the yellow highlight displays across all tracks indicating that all tracks will be populated by the new clip (see screenshot).

To Insert a Single Audio Track



Hold the clip directly on top of the destination audio track to add the audio track only. Only this track is highlighted and only a single audio track (**A1** unless otherwise specified) is placed onto the timeline when it is dropped.

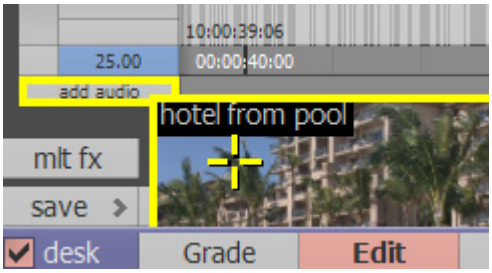
Using the 'Edit' Tab



Dragging a clip onto the **Edit** tab (which highlights yellow) on the Application Bar loads the whole clip on the timeline, overwriting any existing timeline clips. The Edit Application does not need to be open to do this.

Using the Add Audio Button

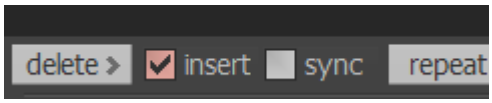
Clicking the **add audio** box adds a new blank audio track to the timeline.



Alternatively, clips can be dragged directly onto the **add audio** box (which highlights yellow) to create a new audio track and load the clip's audio at the current cursor position.

Dragging a clip directly onto the 'add audio' box only adds the highest audio track (A1). Any video or subsequent audio tracks are not added when using this method.

Performing an Insert Edit



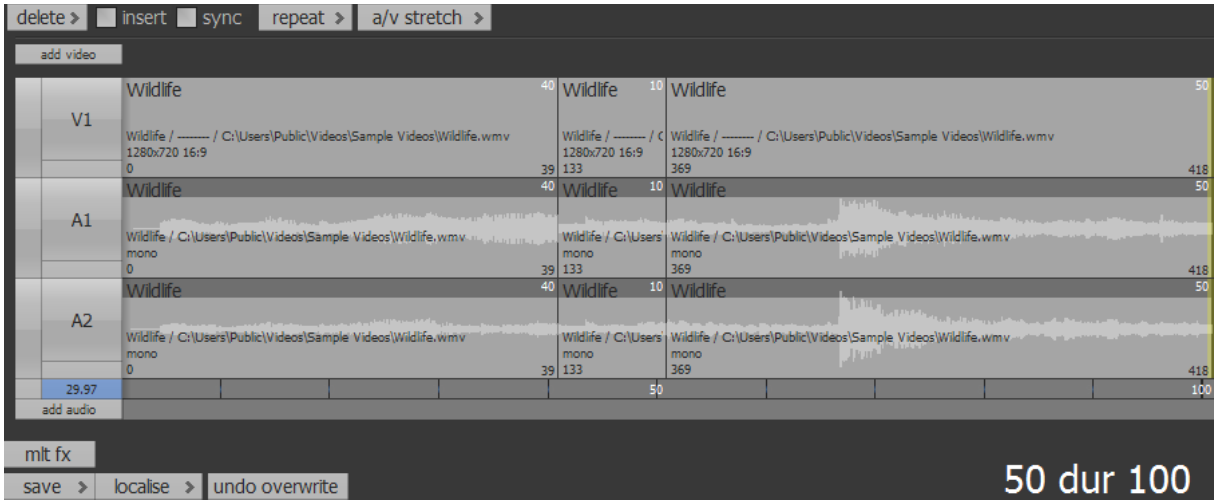
The **insert** tick box at the top-left of the timeline can be used to prevent a new clip overwriting any existing frames on the timeline.

When new media is placed onto the timeline with the **insert** box selected, the existing clip is split and the new media is inserted in the middle. This is referred to as an 'insert edit'.

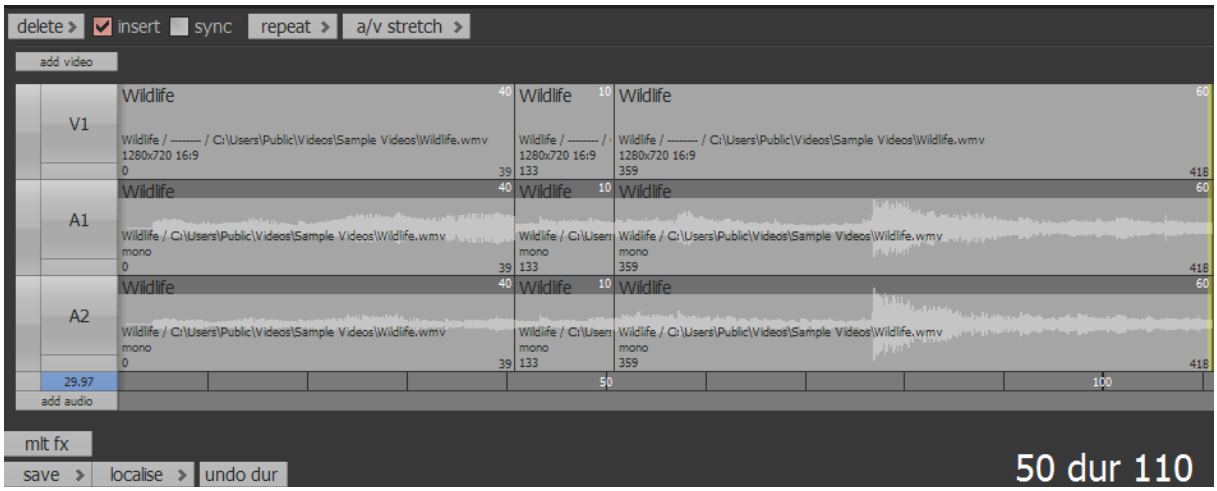
For example, if there is a 100 frame segment on the timeline and a 10 frame segment is dropped into the middle of this, without **insert** selected, the resulting clip would remain at 100 frames long with the new 10 frame segment overwriting 10 frames of the original segment.

With **insert** selected, the resulting clip would be 110 frames long as all of the original frames are retained and the 10 new frames are inserted at the current cursor point.

Without **insert** selected:



With **insert** selected:



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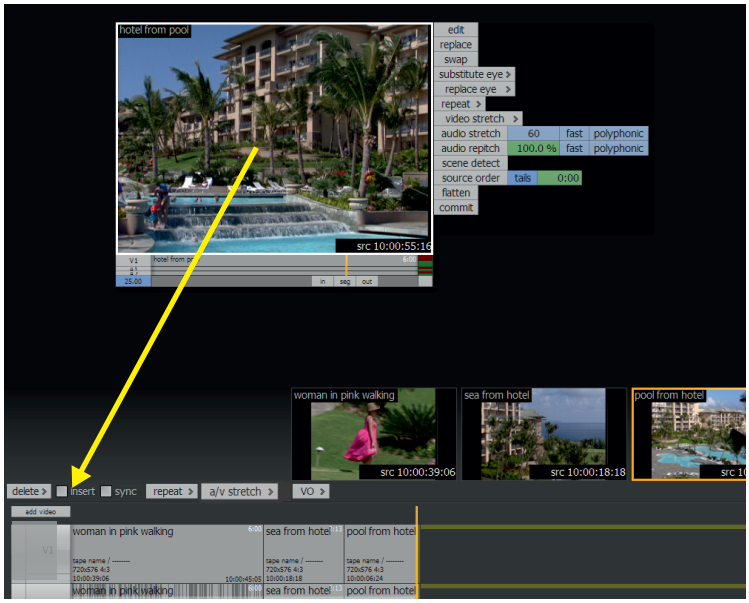
To place a clip on the timeline using **insert**, do the following:



1. Select the **insert** tick box or hit <Insert> on the keyboard to toggle the tick box.
2. Move the timeline cursor to the required timeline position.
3. Select the Floating Clip or segment to be inserted.
4. Drag and drop the clip over the Edit Window or hit <Return> on the keyboard. Alternatively, drag and drop the clip directly over the **insert** box (which highlights yellow).

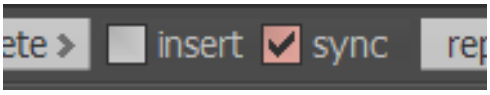
The new clip is inserted at the cursor position, splitting the existing segment and moving it along the timeline accordingly.

Note that if in and out points have been set on the Floating Clip, only the marked segment is inserted. If the in and out points have not been set the whole clip segment is inserted.

With the focus on a Floating Clip, hitting <Ctrl> + <Return> performs an 'insert edit' regardless of whether the 'insert' button is enabled or disabled.

Using 'insert' can take clips out of sync on the timeline. Using sync locks can prevent this. See "Video/Audio Sync" on page 2-20 for more information.

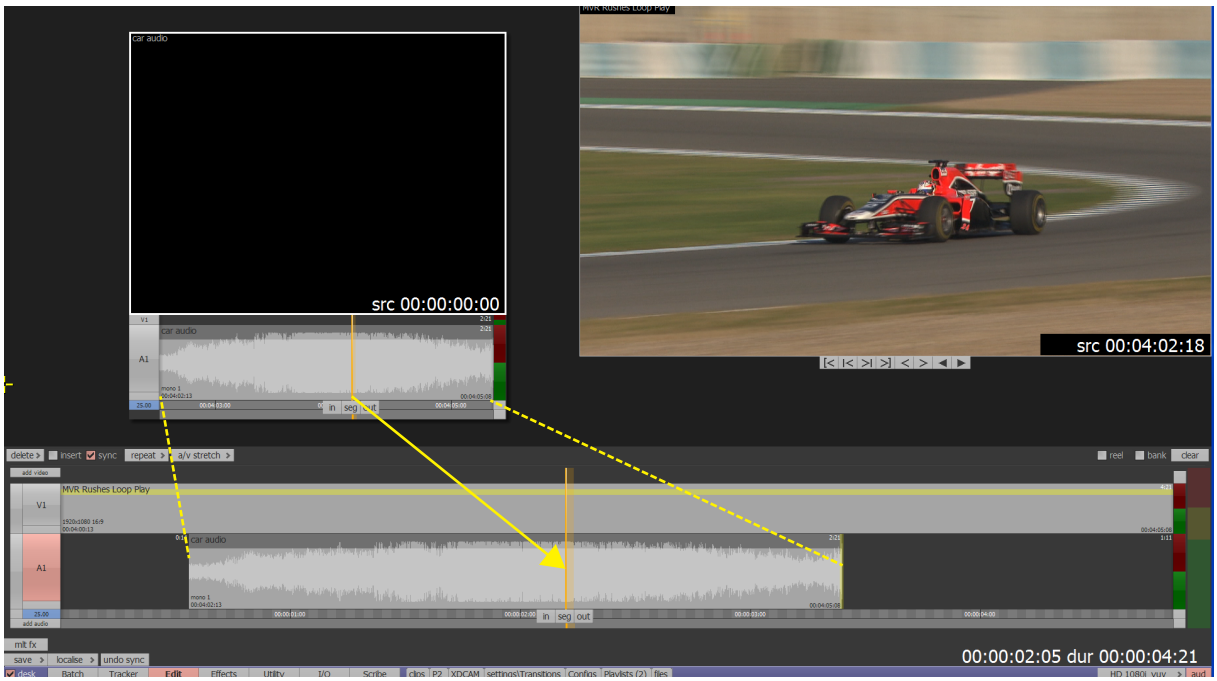
Synchronising Cursor Positions ('Sync')



With the **sync** box selected, a clip can be placed onto the timeline with its cursor point matching the cursor point on the timeline.

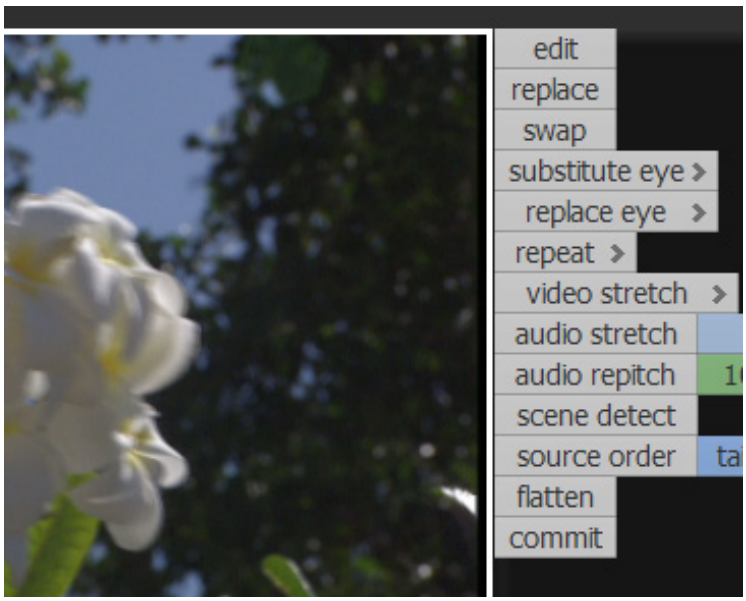
This is often useful when synchronising audio to video. For example, video of a car race can be loaded onto the timeline. An independent clip with audio of a fast car can then be synced to the video. To use the sync feature, do the following:

1. Select the **sync** tick box.
2. Place the cursor at the required point on both the timeline clip and the Floating Clip at the frame where the two clips need to match, eg as the car races past the camera and appears at its loudest. Ensure the correct Track Filters are selected.
3. Hit <Return>.



The audio of the Floating Clip is added to the timeline using the two cursor positions as a reference point.

Using the Floating Clip 'More' Menu



Selecting **edit** from the hidden **more** menu found at the top-right of a Floating Clip places the clip (or a selected section of the Floating Clip) at the current timeline cursor position or within marked in/out points on the timeline. The new clip overwrites any media that it overlaps.

The **replace** option places the clip on the timeline and replaces all existing media on the timeline.

The **swap** option places the content of the Floating Clip onto the timeline and simultaneously places the timeline contents onto the desktop as a Floating Clip, ie the Floating Clip and the timeline edit are 'swapped'.

When the focus is on a Floating Clip, pressing <Return> has the same effect as selecting 'edit' from the 'more' menu.

See the Desktop Editing User Guide for more information about the 'more' menu and working with Floating Clips.

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Deleting Audio

Audio can be deleted from a timeline edit in a number of ways depending on user preference and workflow.

Delete an Audio Track

To delete a whole audio track, do the following:

1. Select the **delete** box located at the top-left of the timeline area. When selected, the **delete** box highlights pink.
2. Select the track filter box of the unwanted track, eg **A1**.

The track is removed from the timeline edit. Any audio tracks below the deleted track are moved up the track stack. For example, if **A1** is removed from the timeline, track 2 is moved up and becomes **A1**, track 3 becomes **A2** etc.

Delete Multiple Audio Tracks

To delete multiple audio tracks, do the following:

1. Select the unwanted tracks by clicking on the relevant track filter boxes.
2. Select the **delete** box located at the top-left of the timeline area. When selected, the **delete** box highlights pink.
3. Click one of the selected track filter boxes. All of the selected tracks are removed from the timeline edit.

Delete an Audio Segment

To delete a single audio segment from a timeline edit, do the following:

1. Double-click on the unwanted audio segment. Alternatively, hold <Shift> and click on the segment. The yellow 'Move' menu is opened.
2. Click on the 'Move' menu's **delete** box to delete the selected segment.

Delete Multiple Audio Tracks

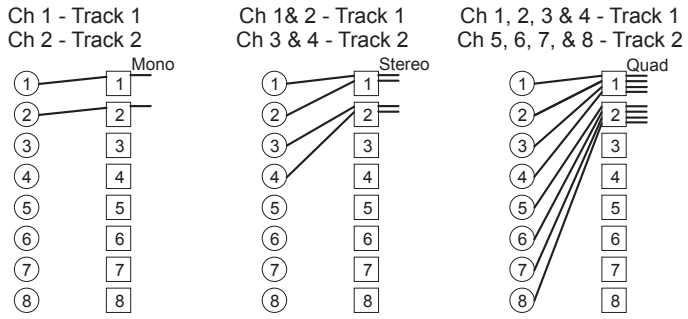
To delete multiple audio segments from a timeline edit, do the following:

1. Double-click on one of the unwanted audio segments. Alternatively, hold <Shift> and click on the segment. The yellow 'Move' menu is opened.
2. Hold down <Ctrl> and click on each additional unwanted segment. Each selected segment highlights yellow.
3. Click the 'Move' menu's **delete** box to delete the highlighted segments.

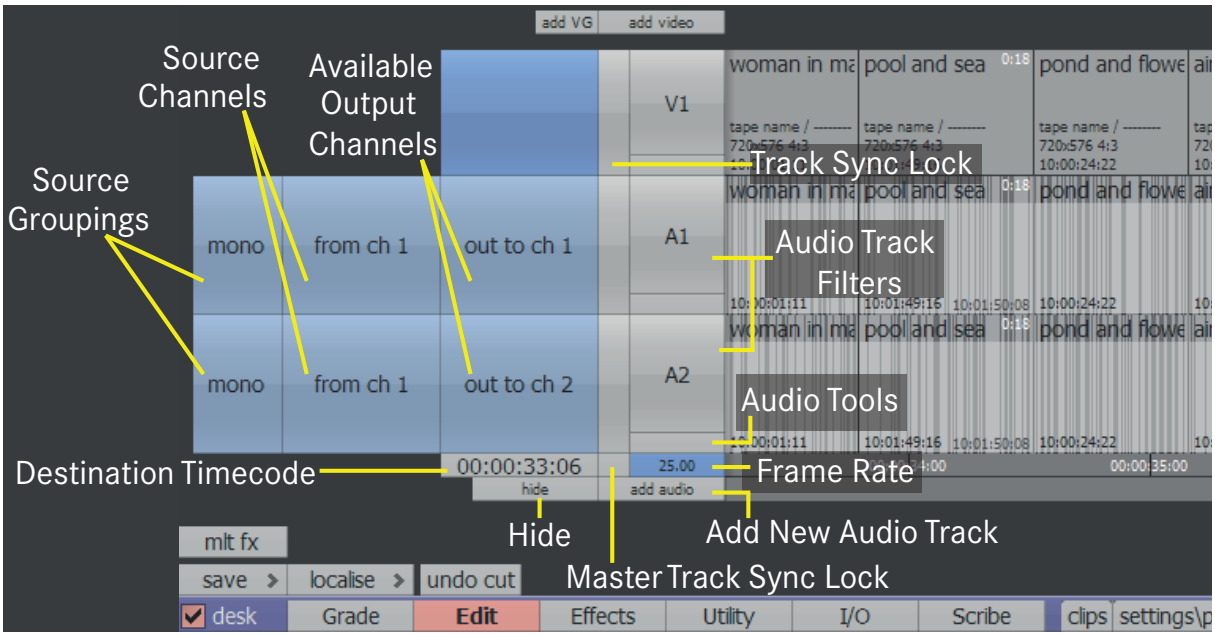
Managing Audio Channels

Set Audio Assignment

When material is recorded into the system, the required audio channels (ie ch 1, ch 2, ch etc) from the source are assigned to the system's internal tracks (ie **A1**, **A2**, **A3**, etc). These internal tracks can be a single channel of audio (ie mono), a pair of audio channels (ie a stereo pair of channels 1 & 2, 3 & 4, 5 & 6 or 7 & 8) or a whole audio group (ie channels 1, 2, 3, 4 or 5, 6, 7, 8).



By default, the system uses the audio assignments that have been set-up during recording, so it is important that a consistent audio assignment is used for all clips recorded.



The system's internal audio tracks can be mapped to individual output audio channels by accessing the left hidden menu and using the **out to ch...** scroll boxes to select the required output channels.

When mapping the timeline audio tracks to output channels, some assumptions are made. These affect instances where there are too many track channels for the selected output channel (eg outputting a quad track as a single channel) or when there are too few timeline track channels for the selected output channels (eg outputting a mono track as a quad).

Where there is a difference in audio assignments between clips on the timeline, the audio channels are automatically re-assigned.

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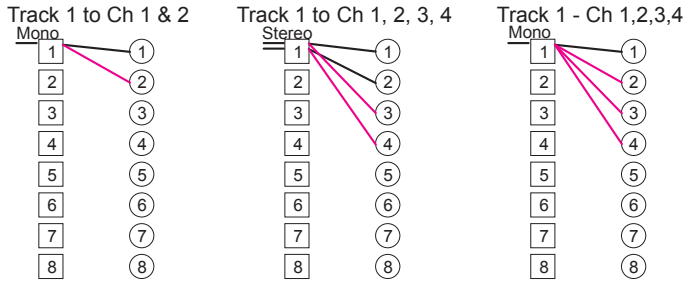


When there are too few channels on the track segment for the selected output channels, the most appropriate track segment channel is automatically duplicated.

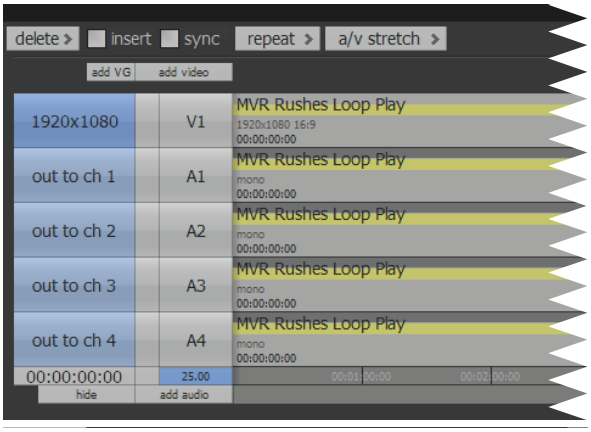
For example, routing a mono track to channels 1 & 2 places the mono channel on both channel 1 and channel 2. If however, a stereo track is to be output as a quad (ie channels 1, 2, 3 & 4) then the stereo pair 1 & 2 also appear on channels 3 & 4.

When there are too many track segment channels available for the selected output channels, unused channels are ignored, eg routing a stereo track to channel 1 discards the second channel.

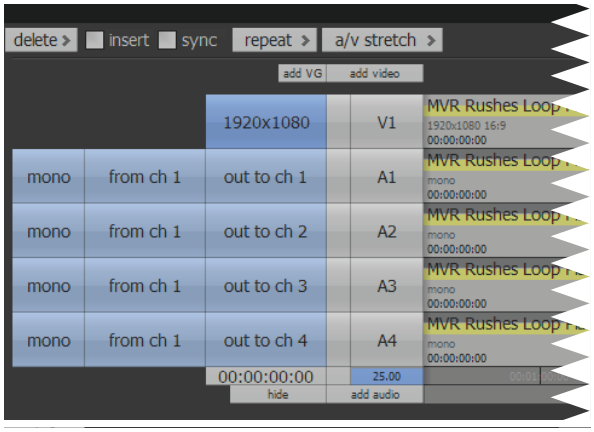
Audio Input Channel Selection

Audio channel selection boxes can be displayed on the **Edit** timeline if required. The **Audio Channel Selection** box must be ticked in the <F1> menu before these boxes can be displayed.

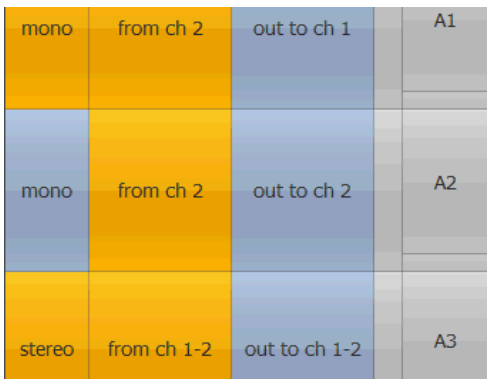
Audio Channel Selection **OFF**



Audio Channel Selection **ON**



With the Audio Channel Selection box selected, the 'Source Channels' box can be used to specify the input channels. Click on the **from ch...** scroll box and select the required source channel. When there are no audio segments selected, this setting affects the whole audio track.



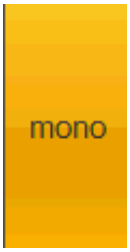
If the timeline audio segments are originally from mixed channel sources, or a segment's source has subsequently been changed, this box turns orange (see screen shot to the left) to indicate that the setting is not global for the whole track.

Audio Grouping Options

The Source Groupings scroll box displays the source grouping of the clip, eg **mono**, **stereo**, **quad** etc. For example, to split a stereo track out to two separate mono tracks select **mono**.

Grouping options are as follows:

Grouping Options	Description
mono	An individual audio channel (eg 1, 2, 3, 4 etc).
stereo	A pair of audio channels (eg 1 & 2 or 3 & 4 etc).
quad	A group of 4 audio channels (eg 1, 2, 3 & 4 or 5, 6, 7 & 8 etc).
8 channel	A group of 8 audio channels (eg 1, 2, 3, 4, 5, 6, 7 & 8 or 9, 10, 11, 12, 13, 14, 15 & 16).
16 channel	A group of 16 audio channels (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 & 16).



If the grouping box is orange this indicates that the clip has a mixed source grouping across the timeline. For example, there may be a mix of mono and stereo segments on one audio track.

A stereo audio track can be split by right-clicking on either the track filter box (eg 'A2') or the actual audio segment and selecting 'split audio'.

Standalone workstations with AVIO3 or eVidIO cards support 16 channels. sQ workstations support a maximum of 8 channels (the maximum that the sQ Server supports).

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Managing Audio Levels

Audio level tools are revealed via the hidden menu to the right of the timeline. These allow the audio levels to be adjusted for each audio track and/or each individual audio segment.

Track or Single Segment Level Adjust

The Track Level and Segment Level boxes are calibrated in decibels. A value of 0.0 indicates that the audio level is the same as when recorded into the system, a positive value indicates that the level has been amplified from the original level and a negative value indicates that the level has been reduced from the original level.

Current Audio Segment Adjust

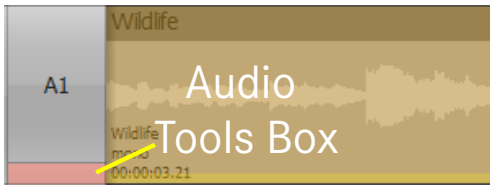
The first set of green bars adjust the audio level of the segment that the timeline cursor is currently positioned on. These adjust a single segment at a time. To adjust the same segment across multiple tracks, select the relevant track filters and hold down <Shift> whilst adjusting the Segment Level controls.

Audio Track Adjust

To adjust the level of a whole track, click on the 'Track Level' control and drag up to increase the level or down to decrease the level. To adjust the levels on multiple tracks, select the relevant track filters and hold down <Shift> whilst adjusting the Track Level controls.

Audio Tools Box

Enable Audio Tools



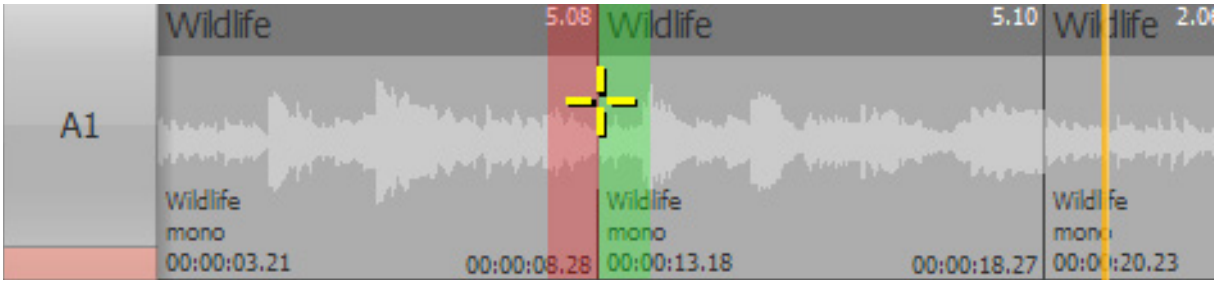
Audio levels can be managed and fades created directly on the timeline using the Audio Tools box. To enable Audio Tools, select the small grey box found below each audio track filter. When enabled, the box highlights pink.

Holding down <Ctrl> has the same effect as having Audio Tools enabled. This is useful if audio needs to be quickly adjusted.

With the audio tools box enabled, highlights appear when the cursor is hovered over audio tracks. The type and colour of highlight differs depending on where the cursor is hovered over the track: over an audio segment or an audio edit point.

When hovered in the middle of an audio segment the segment highlights orange:

When hovered over an audio edit point, a red bar is displayed on the outgoing shot, and a green bar on the incoming shot:



Audio Levels

To adjust audio levels with the Audio Tools box selected, do the following:

1. Hover over the segment to be edited. The segment highlights orange.
2. Click on the segment and drag up to increase the level. Drag down to decrease the level.

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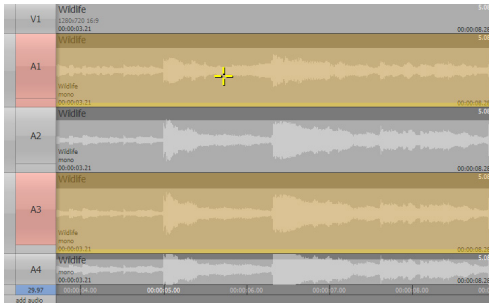
Multiple Segment Adjust

To adjust the level of a segment across multiple tracks, do the following:

1. Use the track filter boxes to select the audio tracks that contain the segments that need to be adjusted (eg **A1** and **A3**).
2. Select the Audio Tools box of one of the selected tracks (eg **A1**).
3. Hover the cursor over the segment that needs to be adjusted. It must be a segment on the track that has Audio Tools enabled. The segment highlights orange.

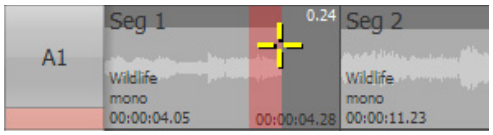


4. Hold down <Shift>. All of the equivalent segments across the selected tracks are highlighted orange (see screenshot).
5. Click on the segment and drag up to increase the audio level or drag down to decrease the audio level. Each highlighted segment across the selected tracks is adjusted.

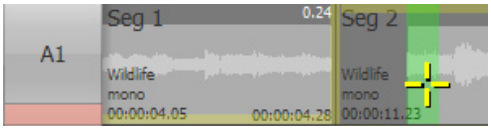
Audio In/Out Points

With Audio Tools enabled, the in point and out points of a segment's audio can be changed by doing the following:

1. Hover over the edit point to reveal the red and green bars. Make sure that the bars are a solid colour (a gradient colour produces a fade in/out effect; See "Audio Fades" on page 2-14).
2. Click on either the red or green bar and drag it left or right to advance or delay the audio.

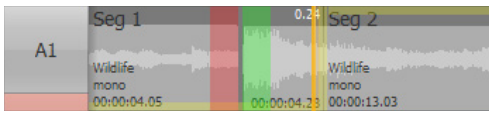


For example, in this screenshot, the out point of Seg 1 has been moved to an earlier point, leaving a section of silence between the end of Seg 1 and the start of Seg 2.



In this screenshot, the in point of Seg 2 has been delayed, leaving a section of silence between the end of Seg 1 and the start of Seg 2.

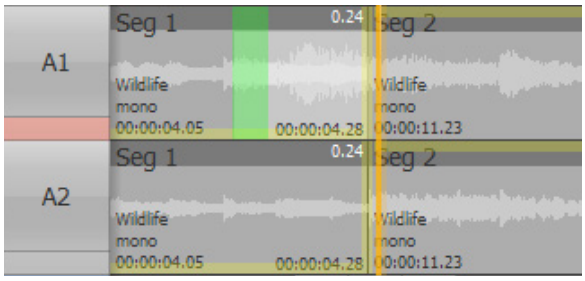
Alternatively, both the in and the out point can be moved simultaneously by ensuring that the cursor is hovered directly over the cut point (both the red and the green bars should be visible).



Now, when the bars are dragged left or right, the in and out points move together.

Overlapping In & Out points

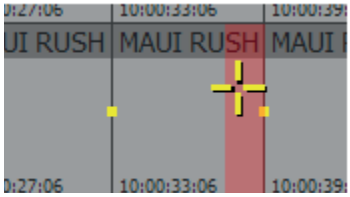
Audio in and out points can also be made to overlap. For example, the in point of one audio segment can be dragged forward past the out point of the previous segment (as seen in the first screenshot). Alternatively, the out point of one audio segment can be dragged past the in point of the next segment (as seen in the second screenshot):

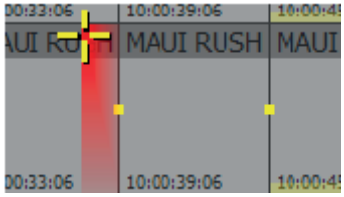


Audio Fades

With the Audio Tools box enabled, audio fades and transitions can be manually added directly on the timeline. Hover over an audio edit point until the red and green in and out bars appear (see “Audio Tools Box” on page 2-12).

When the cursor is hovered over the red and green bars two different functions are available.





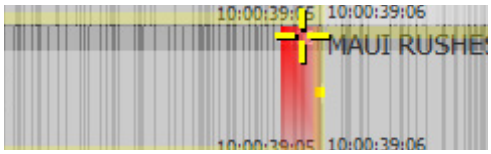
If the bars are solid in colour (as in first screenshot) then the audio in and out points can be moved (see “Audio In/Out Points” on page 2-13).

However if the bar has a gradient (as in second screenshot) then the fade function is enabled. Hover the cursor towards the top of the bar to activate the fade function.

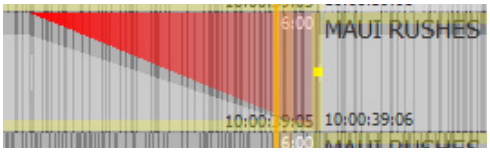
Fades

To create a fade in or out with the audio tools enabled, do the following:

1 Hover over an audio edit point until the red and green bars appear.



2 Move the cursor towards the top of either the out point (red) or in point (green) until the bar displays a gradient colour.



3 Click and drag left (for the out) or right (for the in) along the audio segment.

The result is a gradual fade out (as seen in the screenshot) or fade in. The further the bar is dragged along the track, the longer the fade.

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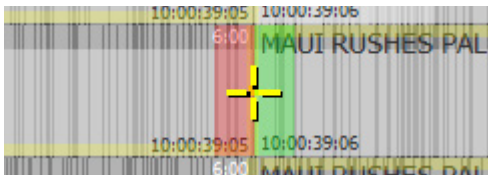
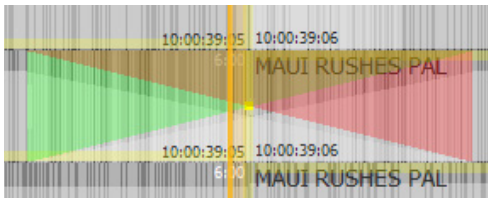
Crossfades

To create a crossfade with Audio Tools enabled, do the following:

1 Hover directly over an audio edit point.



The red and green in and out bars should be visible.



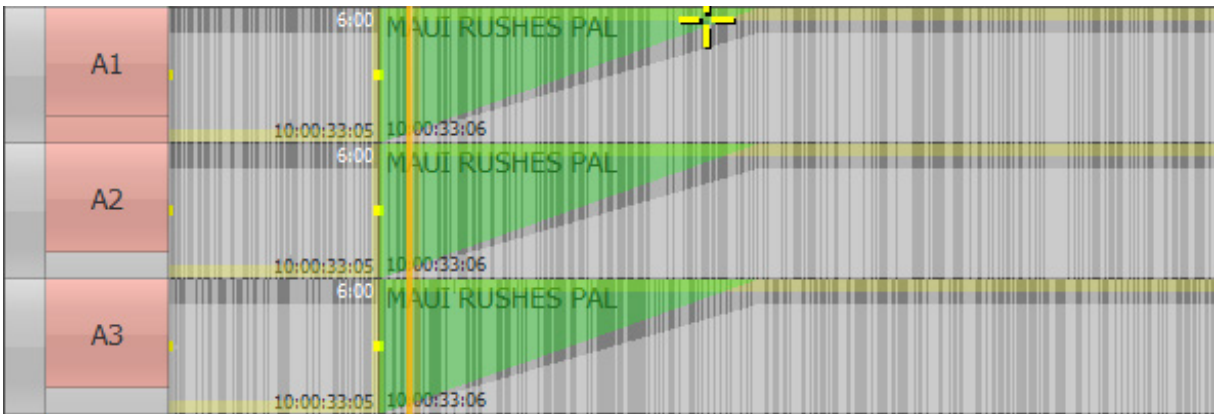
2 Click between the red and green bars and drag upwards to create the crossfade.

3 Click on the crossfade and drag it left or right along the track to change the position of the fade if necessary.

To clear an audio fade or cross fade, right-click and select **del seg fades**.

Fades Across Multiple Tracks

Fades can be applied across multiple selected tracks. To achieve this, do the following:



1 Select the audio track filter boxes of the tracks to be edited.

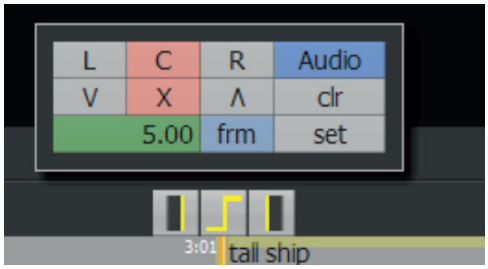
2 Hold down the <Shift> key.

3 Perform steps **1**-**3** of either the 'Fades' or the 'Crossfades' section to add a fade or crossfade across all selected tracks.

Applying a fade across multiple tracks only works provided that the edit points occur at the same time across all selected tracks

Audio Transition Menu

How to Access the Menu



To access the Audio Transitions menu place the timeline cursor at an audio edit point and press <F6>. Alternatively, double-click on an audio edit point.

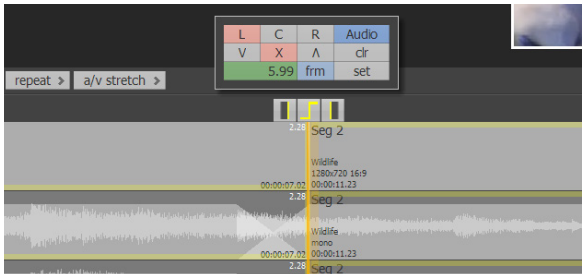
The menu appears as a pop-up above the timeline. Close the menu by hovering in the top-right of the pop-up and clicking the X that appears.

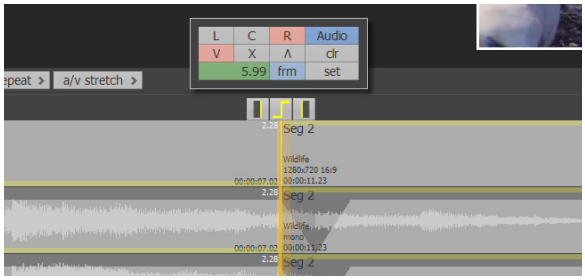
Use the track filter boxes to select which tracks to add the transition to. If no tracks have been selected, a transition is placed on all tracks.

How to Use the Menu

The following options allow the position and type of the audio transition to be selected.

Option	Description
L	(Left) The fade starts before the edit point (at a point within the in tail of the current clip) and stops at the edit point.
C	(Centre) The fade is centred around the edit point (starting and stopping within the audio tails).
R	(Right) The fade starts at the edit point and stops after the edit point (at a point within the out tail of the current clip).
V	(Down) The first clip is faded-down before the second clip is faded-up.
X	(Cross) This is an audio cross fade.
Λ	(Up) The second clip is faded-up before the first is faded-down.





The green numerical box defines the total duration of the audio fade either in frames or milliseconds (select **frm** or **mS** from the scroll box). Click **set** to confirm the audio fade or **clr** to clear it.

The type of fade and its position is represented visually by the highlighted shape around the edit point on the timeline (see the examples above).

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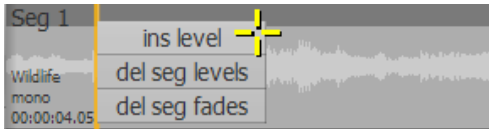
Audio Keyframing

Audio levels across a segment can be customised and controlled by keyframes.

Insert an Audio Keyframe



To add a keyframe, place the cursor on the audio segment at the required position and do either of the following:

- Right-click and select **ins level** from the list that appears.
- Press the < / > key on the keyboard. Using this method inserts a keyframe on all audio tracks simultaneously if no track filter boxes are selected. The audio track filter boxes can be used to control where keyframes are inserted.

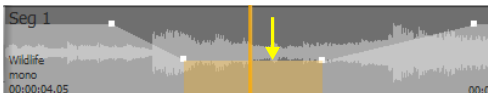
Adjust an Audio Keyframe

To adjust an audio keyframe enable the Audio Tools box (located underneath the track filter boxes) for the relevant track. Alternatively, hold down <Ctrl>.

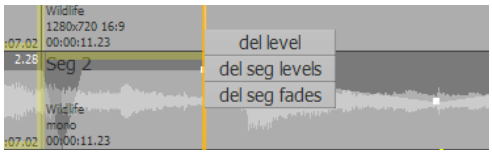
Hover the cursor over the keyframe to be adjusted. An orange bar appears.

To change the position of the keyframe, click the bar and drag left or right.

To change the audio level at this keyframe, click the bar and drag up or down. The audio level between this and other keyframes on the segment is interpolated smoothly.



The audio level between keyframes can be adjusted by hovering in the space between the two keyframes until the area of the segment highlights orange. Click and drag up or down to adjust the audio level between the keyframes.



Keyframes can be deleted by right-clicking on the keyframe to be deleted, then selecting **del level** from the list. Selecting **del seg levels** deletes all keyframes from that segment.

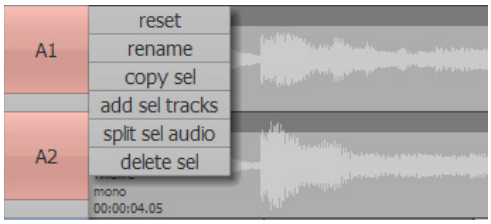
Alternatively, select the **delete** box on the top-left of the timeline and then click on the keyframe.

Audio Track Filter Tools

A number of additional audio tool options can be accessed by right-clicking on the audio track filter boxes.

The options include the following:

Option	Description
reset	Restores the vertical scale of all tracks to the default.
rename	Allows a new name to be entered for the current track (note that this name cannot be saved or stored after the session ends).
copy	Copies the current track, including any audio settings, onto the timeline as a new track.
add audio	Adds a new audio track. The new audio track appears below the current track.
split audio	Separates the audio channels of the current audio track into additional tracks, eg a stereo clip can be split into two individual mono tracks.
delete	Deletes the current audio track.



If one or more audio tracks are selected then the options differ as follows:

Option	Description
copy sel	Copies the selected track(s) including any audio settings onto the timeline as a new track.
add sel tracks	Adds a new audio track under each selected audio track.
split sel audio	Separates the audio channels of the selected audio track(s) into additional tracks, eg a stereo clip can be split into two individual mono tracks.
delete sel	Deletes the currently selected audio track(s).

If video and audio tracks are both selected. The 'copy sel', 'add sel tracks' and 'delete sel' operations apply to all selected video tracks as well as all selected audio tracks.

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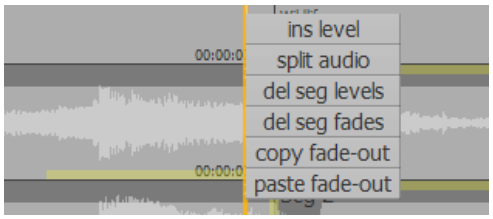
Additional Audio Segment Tools

A number of additional audio tool options can be accessed by right-clicking directly on an audio segment.



These options include the following:

Option	Description
ins level	Inserts an audio keyframe.
split audio	Splits the audio channels of the current audio segment, eg a stereo segment can be split into two individual mono segments, the second of which is placed on a new audio track.
del seg levels	Deletes all audio keyframes and levels from the current audio segment. The audio level for that segment returns to its original level.
del seg fades	Deletes all audio fades from the current audio segment.
copy fade-(in/out/both)	Copies the fade settings from the current segment into a buffer.
paste fade-(in/out/both)	Pastes any fade settings held in the buffer to the current segment.

Copy & Paste Fades

The copy and paste fade options becomes available when right-clicking to the area directly beside or above an audio edit point. Depending on the exact area that is selected (before, after or on the edit point) the option either displays **in, out** or **both**:

- **Copy fade-in** – right-click to the right of an edit point
- **Copy fade-out** – right-click to the left of an edit point
- **Copy fade-both** – right-click directly on the edit point

To use the copy and paste fades, do the following:

1. Right-click to the left, right or directly on the edit point that needs copying.
2. Select the required copy option from the pop-up menu. The fade is now saved into a buffer.
3. Right-click the audio segment that the fade needs to be added to.
4. Select **paste fade-in/out/both**.
5. The fade settings are pasted onto the segment.

In addition to copying fades between tracks, it is also possible to copy between clips. For example, a fade from the main timeline can be copied to a Floating Clip, and vice versa.

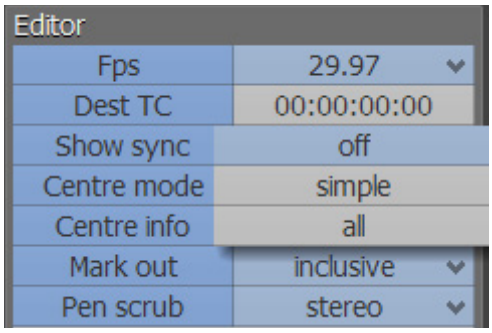
Video/Audio Sync

When video and audio from the same original clip are split during editing, the affected audio segments are shown with either a red underscore or a red parallelogram with an audio slip value. If the audio and video don't have an original relationship, red lines do not appear when the video and audio are moved independently.

'Show Sync' Indication

When audio and video tracks are edited independently of each other (eg when the track filters have been selected) there is a danger of breaking the relationship between them. For example, if frames are added only to the video track, all the following frames move along to make room for the new ones. The audio track however, remains where it is and becomes out of sync with the corresponding video.

The timeline can display the synchronisation of the video and audio segments by displaying sync loss indicators. These indicators can be turned on or off from the <F1> Configuration Window.

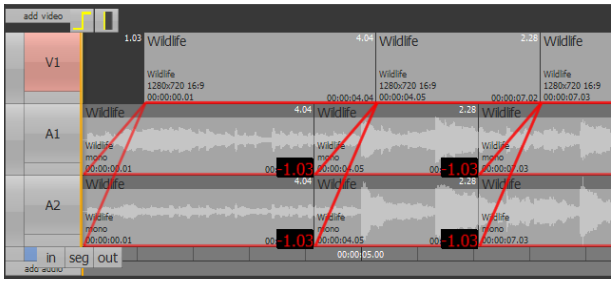


Navigate to the **Editor** section of the window and select **Show sync**. From the drop-down menu select either **off**, **simple** or **all**.

off: turns the sync indicators off

simple: displays only red lines under the clip segment that has lost video/audio sync.

all: displays red lines joining the original video frames with the original audio frames as well as a numeric value for how far out of sync the video and audio are.



all

simple

Sync Lock

Typically when the content of recorded video and audio are matched (for example, a person talking to camera), sync lock must be maintained at all times. Other material such as audio effects tracks, or commentaries from other sources, may need to be slipped to correspond with events on the edit timeline.

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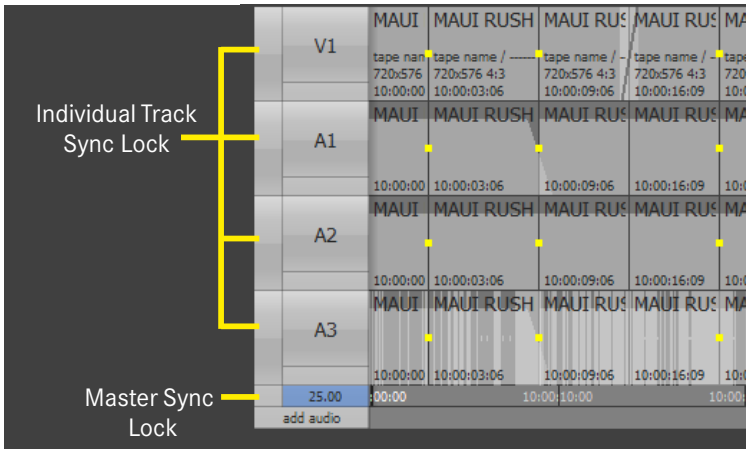
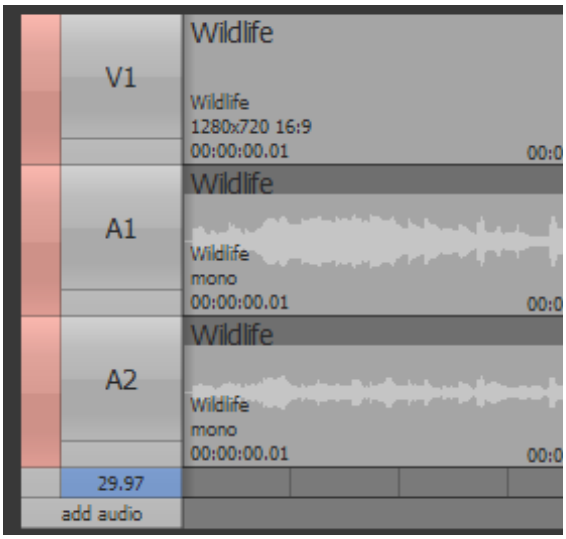
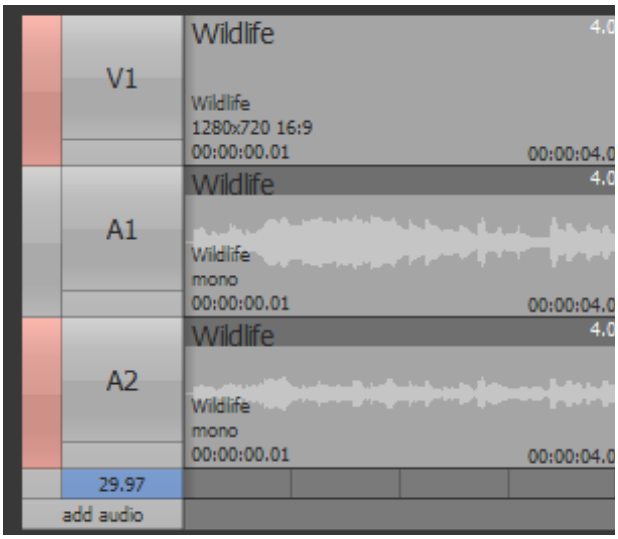


Sync lock can be maintained automatically by enabling the 'Master Sync Lock' box in the bottom-left corner of the timeline. When enabled all audio and video track sync locks highlight pink indicating they are locked. Filter the video and audio tracks that are included in the sync lock by enabling or disabling the individual track sync locks.



Master Sync Lock



Track Sync Lock

When the Master Sync Lock box is pressed, all tracks are sync locked. Now when one track is edited, the system automatically forces the audio or video to follow. For example, if a video-only segment is inserted into the video track then the audio tracks that are locked to it have silence inserted to maintain video/audio synchronisation. Likewise if a segment of video is removed then the corresponding audio track segment is also removed.

Alternatively the individual Track Sync Lock boxes can be selected to only lock specific tracks together.

Correcting Broken Sync

When audio/video sync is lost it can be corrected by noting how many frames the track is out of sync by and then sliding the segments correspondingly to regain sync.

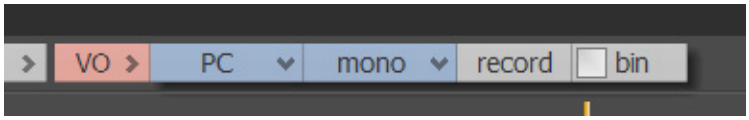
VO (Voice-over) Function

Voice-overs can be recorded directly onto the timeline using the **VO** feature located to the top-left of the timeline area.

How to Record a Voice-over

To record a voice-over to a specific track, do the following:

1. To add a new audio track specifically for a voice-over, use the **Add Audio** box.
2. Using the Track Filter boxes, select the track to record the voice-over on.
3. Ensure the timeline cursor is at the required start point.



4. Click the **VO** box. The **VO** menu is now displayed.
5. Select the audio input source from the first blue scroll box. The Edit Application uses either the XLR or PC (sound blaster) microphone input to record the voice-over.
6. Select whether to record in **stereo** or **mono** from the second scroll box.
7. Tick the **bin** box to place a copy of the voice-over in the Clips Bin as a separate audio clip.
8. Click **record** to start (or stop) the recording.

There are further options to adjust voice-over settings in the **PC Audio** section of the <F1> Configuration Window.

This allows the microphone input source, recording and preview levels to be selected.

To fill a timeline gap, first select the relevant track filter and mark in and out points highlighting the area that needs to be filled. Place the cursor slightly before the in point and then click **record**. This allows lead-in time and leaves tails under the clips on either side.

If no microphone is connected then the 'VO' box does not appear.

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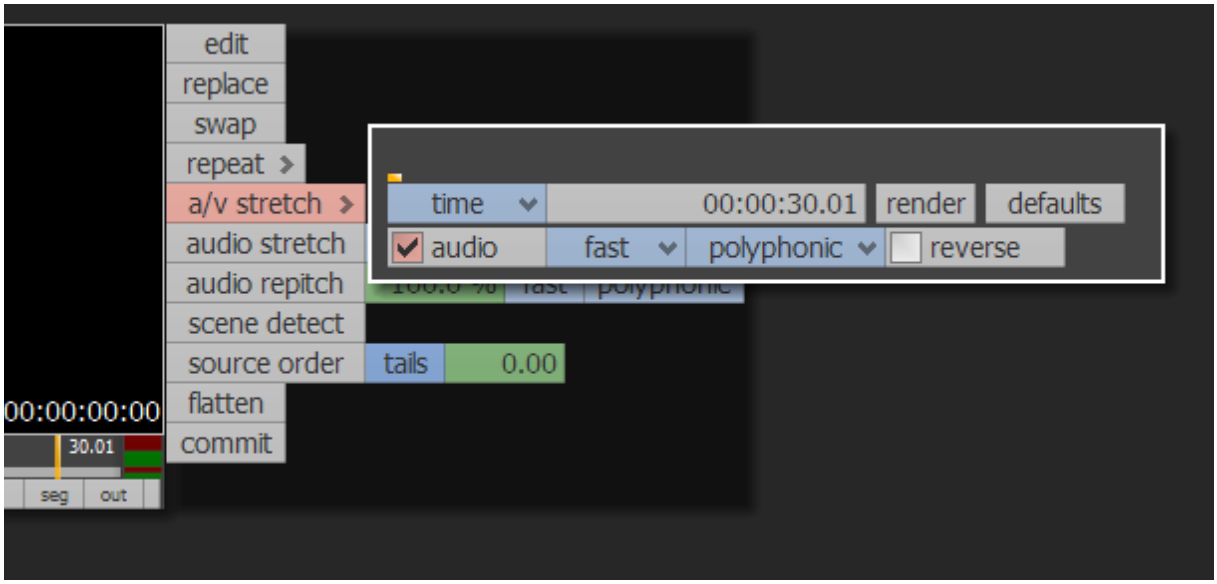
Stretch Audio

Audio tracks can be stretched in order to sync with a video track, to match a specific frame rate or to fit a specific duration.

A/V Stretch

The **a/v stretch** tool allows clips to be stretched to a specific duration, speed or multiple of it's original duration. This tool can be used to stretch video only clips, video and audio clips or audio only clips.



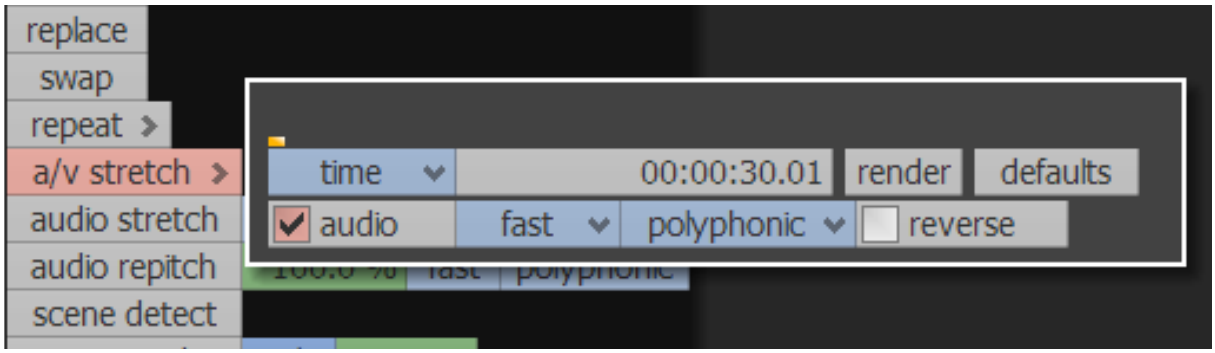
To stretch audio using the **a/v stretch** tool, do the following:

1. Access the **a/v stretch** tool using one of the following methods:
   - Access the **more** menu by hovering directly outside the top-right corner of the Floating Clip. Select **a/v stretch**.
   - Select **a/v stretch** from the top-left of the timeline area.
2. A pop-up is displayed providing stretch options. Note that this pop-up is different depending on whether the clip being stretched contains video tracks or not. The example used above features an audio only clip.
3. Set the required options.
4. Click **render**.
5. Select either **save** or **edit**.

Audio can only be stretched between 50% and 200% of its original duration.

A/V Stretch Options

When **a/v stretch** is selected, a pop-up providing a number of options appears. These allow the type of stretch to be selected. To close the pop-up, click the yellow cross that appears when hovering over the top-right corner of the pop-up.



Type of Stretch

The 'Type' scroll box (**time** is selected by default) allows the type of stretch to be selected from the following options:

time	Stretches the clip to the desired duration.
speed	Stretches the clip based on a percentage of the original speed.
multiple	Stretches the clip based on a multiple of the original duration.

Quality

The 'Quality' scroll box (**fast** is selected by default) allows the quality of the audio conversion to be selected. Quality options include **fast**, **good** or **best**.

Audio Type

The 'Audio Type' scroll box (**polyphonic** is selected by default) allows the appropriate type of audio re-sampling and pitch correction algorithm to be selected. Typically, **monophonic** is used for voice and **polyphonic** for music.

Reverse

Tick the **reverse** box to reverse the order of the frames to produce a clip that plays backwards. It can be stretched to a new duration as part of the reversing process or it can retain the original duration.

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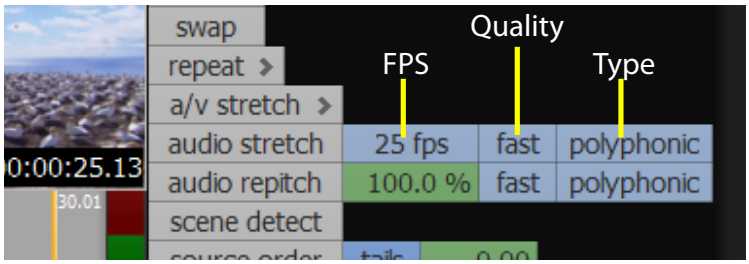
Audio Stretch

The **audio stretch** tool is designed to stretch audio to a specific frame rate. The **audio stretch** tool is located in the **more** menu of a Floating Clip. To stretch an audio track using **audio stretch**, do the following:

1. Access the **more** menu by hovering directly outside the top-right corner of the Floating Clip.
2. The available audio stretch options are displayed to the left of the **audio stretch** box. Do not click **audio stretch** until the required settings are specified.
3. Specify the required settings.
4. Click the **audio stretch** box to start the stretch process.

When complete the resulting clip maintains the original video frame rate but contains the new stretched audio tracks.

Audio Stretch Options



The audio stretch process has a number of options available to suit the type of audio material being stretched and the desired level of accuracy:

Option	Description
FPS	The FPS (Frame Per Second) scroll box allows the target audio frame rate to be selected (ie, **23.98**, **24**, **25**, **29.97**, **30**, **47.95**, **48**, **50**, **59.94** or **60**).
Quality	The Quality scroll box allows the quality of the stretch to be selected (ie, **fast**, **good** or **best**).
Type	The Type scroll box allows the appropriate type of audio re-sampling and pitch correction algorithm to be applied. Typically **monophonic** is used for voice and **polyphonic** for music.

When using the 'audio stretch' function the track filter boxes cannot be used to protect/enable specific audio tracks. All audio tracks are affected.

Audio Repitch

The pitch of audio tracks can be raised or lowered, or the pitch of an audio track that has been stretched can be retuned using the **audio repitch** tool.

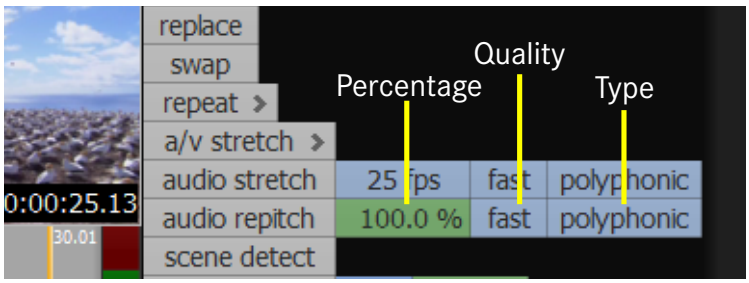
Repitching Audio

To repitch the audio, do the following:

1. Access the **more** menu by hovering directly outside the top-right corner of the Floating Clip.
2. The available audio repitch options are displayed to the left of the **audio repitch** box. Do not click **audio repitch** until the required settings are specified.
3. Specify the required settings.
4. Click the **audio repitch** box to start the repitching process.

When complete, the resulting clip maintains the original video frame rate but contains the new repitched audio tracks.

Audio Repitch Options



The audio repitch process has a number of options available to suit the type of audio material being repitched and the desired level of accuracy:

Option	Description
Percentage	Use the Percentage box to raise or lower the pitch of the audio based on a percentage of the original.
Quality	The Quality scroll box allows the quality of the repitch to be selected (ie, **fast**, **good** or **best**).
Type	The Type scroll box allows the appropriate type of audio re-sampling and pitch correction algorithm to be applied. Typically **monophonic** is used for voice and **polyphonic** for music.

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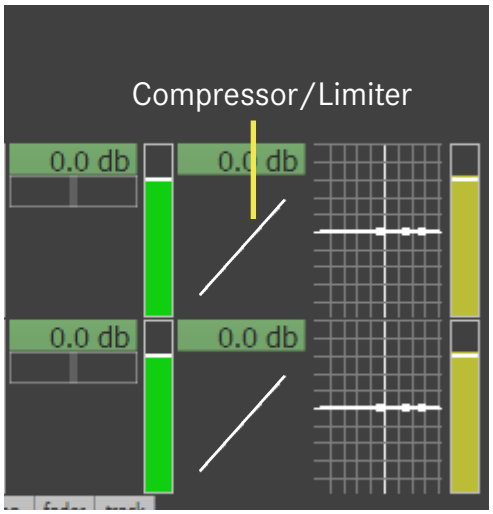
Audio Compressor/Limiter

The Audio Compressor/Limiter tool is accessed within the hidden audio menu to the right of the timeline.

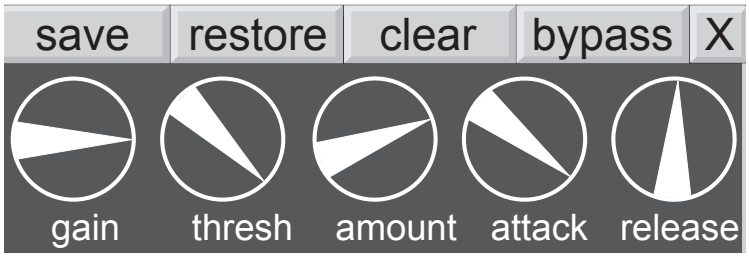


The Compressor/Limiter tool is located to the right of the Track Level control. It can be accessed by clicking on the diagonal line shown in the screenshot.

The Compressor/Limiter tools control the currently selected segment only, but the settings can be transferred from one segment to another.

The compressor provides a form of automatic level control. It attenuates high levels by reducing the dynamic range, making it much easier to control signals and set appropriate audio levels. Limiting is an extreme form of compression, where the output signal is sharply attenuated so that it cannot exceed a particular level.

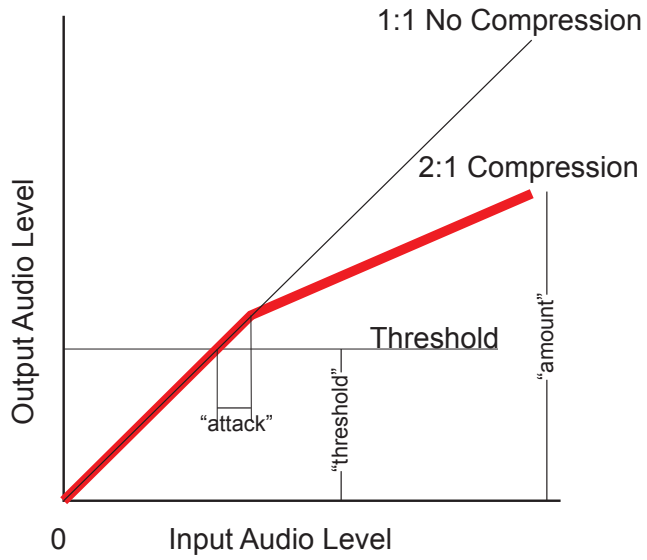
Compressor/Limiter Tools



When the Compressor/Limiter menu is opened five dials are displayed. These can be controlled directly using the cursor or by clicking on the dials to display green numeric boxes.

The function of each dial is as follows:

Dial	Description
gain	The **gain** control sets the overall output audio level to compensate for the apparent loss due to the compression of audio with a large dynamic range.
thresh	(Threshold) The threshold control sets the level above which compression starts.
amount	The **amount** control sets the compression ratio value.
attack	The **attack** control sets how quickly the compression takes place after the audio level has exceeded the threshold level.
release	The **release** control sets how quickly the compression is turned off after the input audio level has dropped below the threshold level.



Compression is displayed as a ratio which defines how much of the output audio level is produced for any given input level. A ratio of 1 : 1 means that the audio is unaffected by compression.

Above the compressor/limiter dials are a number of options. Their functions are as follows:

Option	Description
save	The **save** box saves the current settings in a buffer so that they can be applied to other tracks/segments.
restore	The **restore** box applies the settings currently held in the buffer to the currently selected segment.
clear	The **clear** box clears the settings of the currently selected track.
bypass	The **bypass** box disables the effect of the compressor/limiter for the selected segment.
X	The **X** box in the top-right corner closes the menu.

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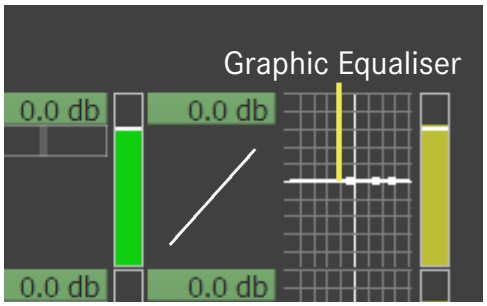
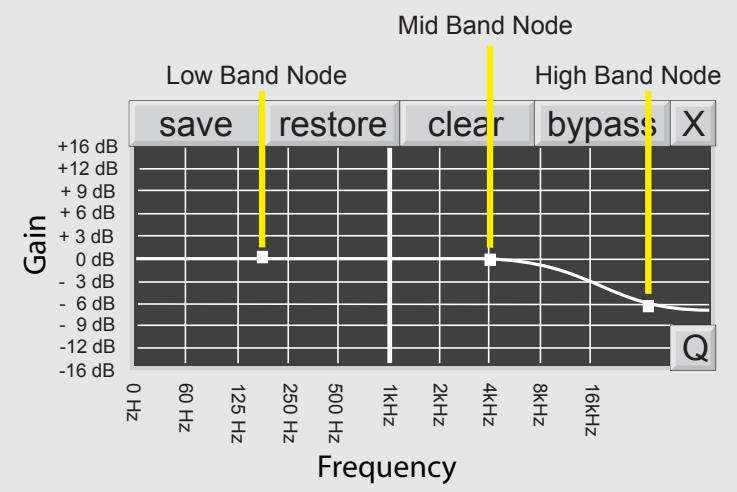
Graphic Equaliser

A three band graphic equaliser is provided for each audio track on the timeline. The Graphic Equaliser tool is accessed within the hidden menu to the right of the timeline.



Located to the right of the Compressor/Limiter tool, the Graphic Equalizer is accessed by clicking on the graph area shown in the screenshot.

How to Use the Graphic Equaliser



The graph displays gain along the vertical axis and frequency along the horizontal axis.

The frequency response of the graphic equalizer is shown by the white curve intersecting the 3 white square nodes. The nodes represent the 3 frequency bands.

The centre frequency and gain/attenuation for each of the 3 bands (low, mid and high) can be changed by selecting the individual white nodes on the graph and dragging. Hovering the cursor over the white nodes displays their current values.

Dragging a white node left or right decreases or increases the centre frequency for that band. Dragging a white node down or up attenuates or amplifies the frequencies in the band.

The nominal width of each of the 3 bands is 1000hz, but each band can be adjusted between 100hz and 4000 Hz by selecting the **Q** box and sliding the white node up and down.

Create high pass, low pass and band stop filters for the audio, by moving the white nodes closer together.

The graphic equalizer settings can be reset by holding the <Shift> key on the keyboard and clicking on the graph with the cursor.

To hear the effect of the 3 band equaliser during setup it may be necessary to mute or solo individual audio tracks on the timeline.

Above the graph are a number of options. Their functions are as follows:

Option	Description
save	The **save** box saves the settings of the currently selected graphic equaliser in a buffer.
restore	The **restore** box applies the settings currently held in the buffer to the currently selected track graphic equaliser.
clear	The **clear** box clears the settings of the currently selected track graphic equaliser
bypass	The **bypass** box disables the effect of the graphic equaliser.
Q	The **Q** box then selecting a node on the graph allows the size of the band to be adjusted.
X	The **X** box in the top-right corner on the graphic equaliser closes the menu.

Audio FX Loop

This is applicable only for hardware seats when audio needs to be processed externally, eg through a mixer or graphic equalizer. An FX Loop can be set to do this. The line output from the sound blaster card can be connected to the input of the external device and the output of the external device is connected back to the line input (or other sound blaster input selected in the <F1> Configuration Window).

The audio track to be processed is selected using the green Solo button to the right of the timeline. When the **FX Loop - Record** box is clicked the clip is played from the current frame on the timeline and the selected audio track is routed through the external device; a new audio track is created. Clicking the **Record** box again stops the process. The clip continues to be played and subsequent selections of the **Record** box places the processed audio on new audio tracks.

The value in the green **delay n frames** box can be used to compensate for the static delay in the audio process path to avoid manually matching the new audio position with that of the original.

If the **Bin** box is selected before **Record** is clicked, a copy of the processed audio is automatically saved in the Clips Bin (with the title ‘FX loop clip’) as well as on the timeline.

When a publish is performed on an sQ Seat, an audio mix down is performed as part of the publish process. This ensures that audio is processed in a playable format.

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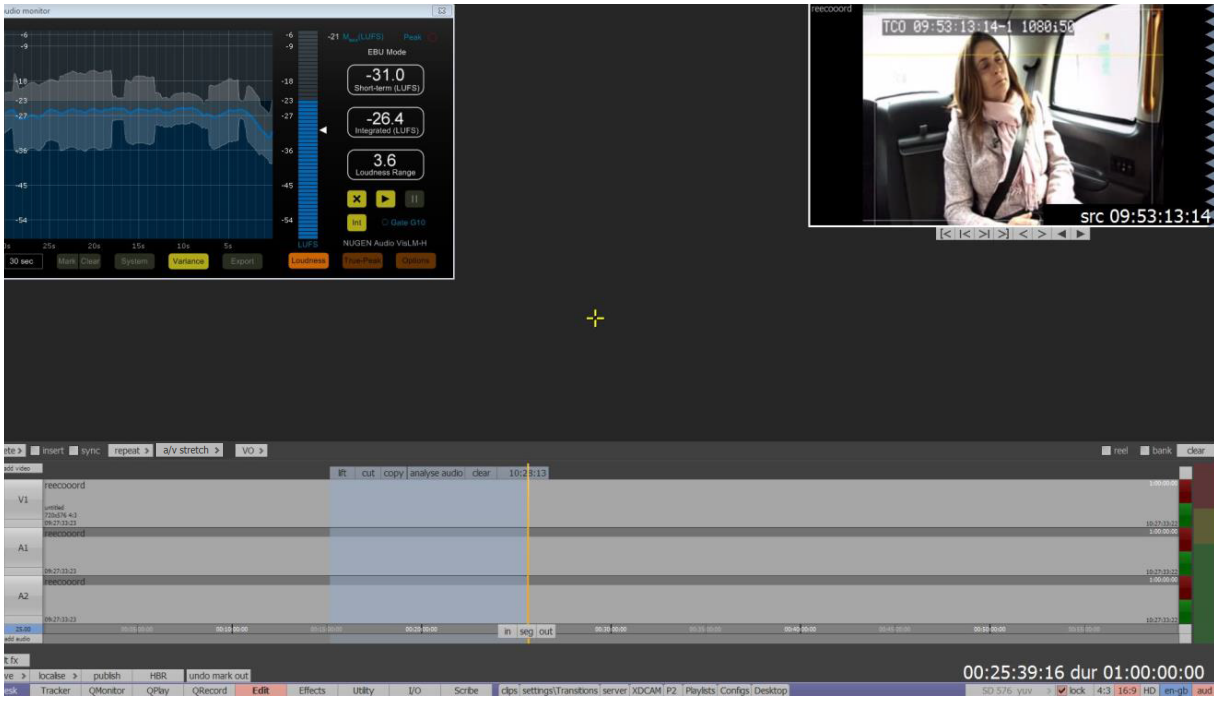
Loudness Metering Plug-in Option

NUGEN VisLM Loudness Metering Plug-in

The NUGEN VisLM loudness meter is an ITU, ATSC and EBU standard compliant loudness meter. It provides broadcasters and post houses with a way to measure, compare and contrast loudness during production, broadcast and post production.



VisLM is available in two versions, VisLM-C (compact) and VisLM-H (history), which are both supported.

VisLM provides several essential parameters for loudness measurement:

- True-Peak Level Metering – the maximum level of the signal.
- Loudness Range - to help decide if and how much dynamic compression to apply.
- Momentary - 'instantaneous loudness' for mixing by ear.
- Short Term Loudness - 3 second time window.
- Program Loudness - long term integrated loudness measurement.

In order to run the VisLM a license is required which can be obtained directly from NUGEN Audio. See "NUGEN VisLM Plug-in" on page A–5 for more information.

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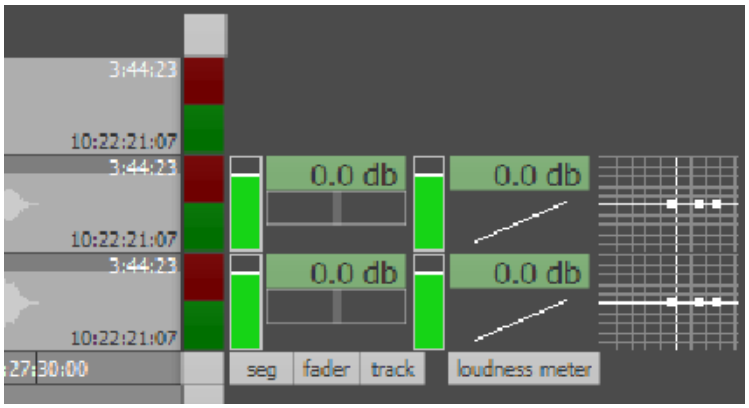
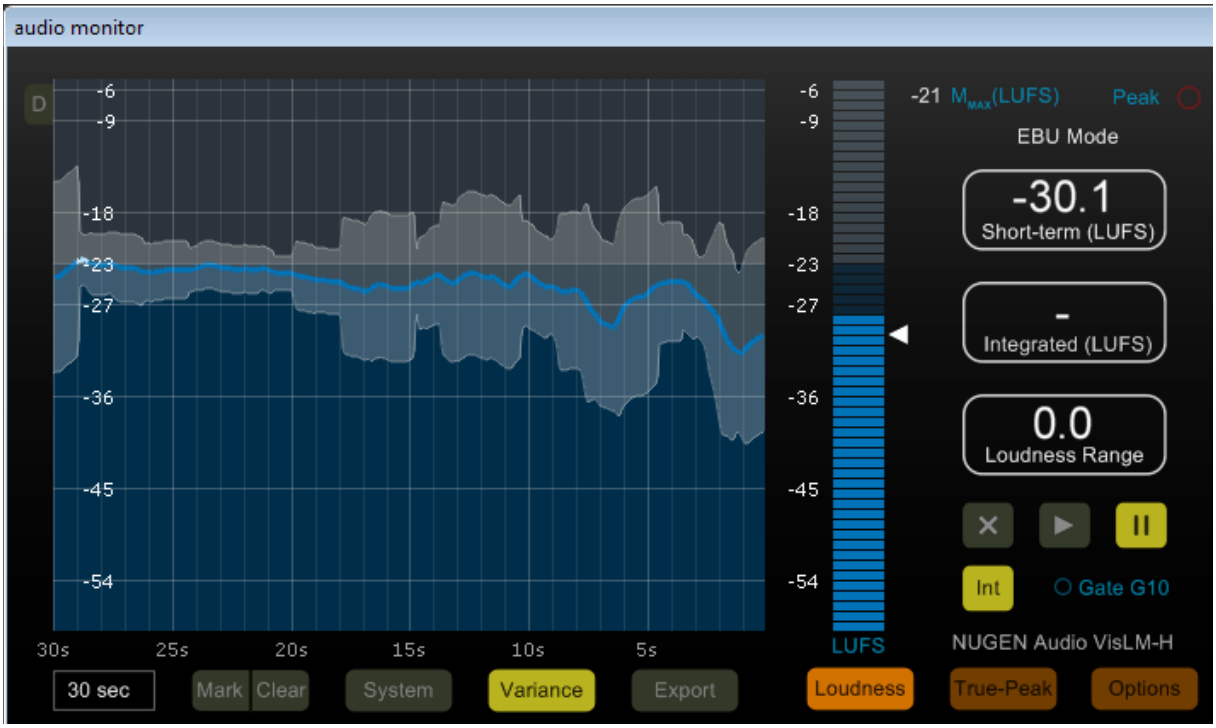
Using the Loudness Meter

If the loudness meter is installed and the configuration set up correctly, then the hidden audio controls to the right of the timeline include a box for launching/hiding the loudness meter window.



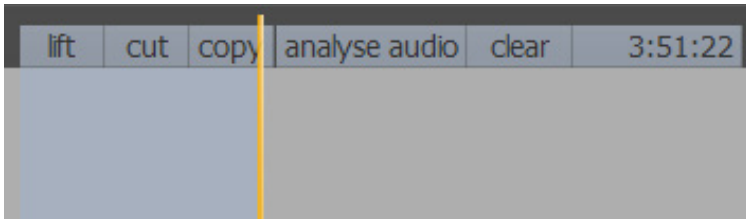
The box is labelled **loudness meter**. Selecting this button opens the Loudness Monitor plug-in in a Windows style window, initially at the top left corner of the UI. The window can be dragged to a new position. It can be moved to a second monitor if necessary.



The picture above shows the NuGen VisLM loudness meter. As the audio on the timeline is played, the graph and meter change according to the loudness of the audio at that point in time. If the play button on the plugin is pressed, it records the loudness and provides an integrated loudness over the period of time until it is stopped.

Deselecting the **loudness meter** box in the hidden audio menu the closes the loudness meter window.

When a VST plugin is installed, a new button - **analyse audio** - is available in the blue Lift Menu when an audio segment is selected.



Selecting the **analyse audio** box, does the following:

- Launches the Loudness Meter window if it's not currently visible.
- Resets the integrated loudness value in the Loudness Meter.
- Starts the Loudness Meter plugin's integrated loudness monitoring.
- Pushes the selected audio at faster than real time.
- When all the audio has been pushed through the plugin, the integrated loudness monitoring is stopped, leaving the loudness meter displaying a loudness value for the selected section of audio.

In order to accommodate different loudness meters, entries have been added into the "Custom Settings\Config" section of the registry for the VSTPlugins project.

The registry entries are "VST Play Parameter" and "VST Reset Parameter", for NuGen VisLM. These need to be set to "Int Play" and "Int Reset".

If a different loudness meter is used, the registry must be modified according to the parameter definitions in the plugin. A list of available parameters is printed in the seat log when the plug-in is instantiated.

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Appendix

About This Manual

This guide covers software available on some Quantel stand-alone and server-connected systems. It may cover functions or options not available on the system you are using.

This guide was written and published by Quantel. The bottom of each page displays the guide's reference number, eg **2140-57-xxx** plus a revision letter, eg **B** (B being more recent than A which is the original). The publish date is also indicated in the format **mm/yy**. If you require hard copies of this guide, always quote the reference number, revision letter and title.

2140-57-025 revision	**publish date**	*ECO (Quantel use only)*	**software version**
A	Nov 2013	E44973	5.3
B	**August 2014**	**E45358**	**5.3**

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Notices

Maintenance

WARNING (WM2) SERVICE PERSONNEL – MAINTENANCE AND CALIBRATION WITHIN THE EQUIPMENT ENCLOSURE IS ONLY TO BE CARRIED OUT BY SERVICE PERSONNEL (12/97)

Conventions Used

Symbols

See: Reference to other items in this document or in other documents.

Notes: System, software and workflow points to consider and remember.

Tips: Useful hints and advice when undertaking tasks.

Information: Additional hardware or software information which may be useful.

Cautions: Indicate possible damage to (or misalignment of) the equipment if the indicated statements are ignored or the indicated procedures are not followed correctly.

WARNINGS: INDICATE DANGER TO LIFE AND LIMB IF THE INDICATED STATEMENTS ARE IGNORED, OR THE INDICATED PROCEDURES ARE NOT FOLLOWED CORRECTLY.

Text

<Text> indicates a specific key press on the QWERTY keyboard.

NN/nn indicates a value entered on a numeric keypad.

Text/text indicates either a Quantel application menu function or a Windows/Quantel installation/system setting.

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Helpdesk & Web Support

24 Hour Helpdesk

tel +44 (0)1635 38508* **fax** +44 (0)1635 815892
email support@quantel.com

* calls may be recorded for training & quality control purposes.

Website & Downloads (manuals, drivers, plugins & software)

http://www.quantel.com go to support–downloads (login required)

NUGEN VisLM Plug-in

A license is required to run the NUGEN VisLM. Quantel customers should purchase licenses direct from NUGEN Audio by either:

a Purchasing the product from their online shop, clicking the hot-link within NUGEN VisLM itself.

b Making a purchase from an authorised reseller.

Any support or licensing issues relating to NUGEN VisLM should be directed to NUGEN customer support:

http://www.nugenaudio.com/support.php

http://nugenaudio.com/licensing.php

Or by emailing:

support@NUGENaudio.com

Appendix B

Keyboard Shortcuts

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Configuration Window

Keyboard Shortcut	Function
<F1>	Opens/closes the Configuration Window.

Layout

Keyboard Shortcut	Function
<F3>	Displays/hides the default safe area in the Edit Window.
<Ctrl>+<⇧>+<Home>	Switches to 'default layout', which forces the following actions: Launch Edit application; clear timeline; close MLT FX; delete all Floating Clips; remove copies of Server Bin (but not original); dock Server Bin with Clips Bin; focus on Server Bin; move bins to top-left of desktop and resize to 35% of screen width; change bin view to 'title' (ie not 'browse'); clear clips docked to Edit Window. **NOTE: THIS ACTION CAN NOT BE UNDONE. ENSURE ANY WORK IS SAVED BEFORE USING THIS SHORTCUT.**

Editing

Keyboard Shortcut	Function
<Tab>	Toggles focus between the timeline and the Floating Clip.
<Ctrl>+<⇧>+<F>	Switches focus to timeline.
<Alt>+<Return>	Performs single clear of timeline: press twice to double clear the timeline (ie resets timeline horizontal/vertical scale, number of tracks, and default frame rate as set in the <F1> Configuration Window's **Fps** drop-down).
< ` >	Toggles the video track filter (**V1**) on/off on the timeline or Floating Clip, depending on current focus.*
<Ctrl>+<A>	Toggles the video and audio track filters on/off on the timeline or Floating Clip, depending on current focus.*
< \ >	Displays the yellow 'Move' menu.*
<Return>	If a Floating Clip or a Clips Bin clip is selected, pressing this key (press twice for Clips Bin clip) places the clip on the timeline at the current timeline cursor position overwriting any overlapping media. If **insert** is ticked (or the <Insert> key pressed), the existing media is split and moves along the timeline accordingly (referred to as 'insert edit'). If **sync** is ticked, a Floating Clip can be placed onto the timeline with its cursor point matching the cursor point on the timeline clip.
<Ctrl>+<Return>	Performs an 'insert edit' regardless of whether the **insert** function is enabled or disabled (see previous <Return> shortcut).
<Insert>	Toggles the GUI **insert** function (ie 'insert edit') on/off.*

Keyboard Shortcut	Function
<Alt>+<Y>	Toggles the GUI **sync** function on/off.*
<H>	Inserts a edit point at the current timeline cursor position.
<M>	Selects Match Frame mode.*
<Q>	Jumps to the currently selected in point.
<W>	Jumps to the currently selected out point.
<E>, <I>	Marks an in point at the current timeline cursor position.
<R>, <O>	Marks an out point at the current timeline cursor position.
<T>	Marks the current segment selected by the current timeline cursor position.
<D>	Clears the currently assigned in point.
<F>	Clears the currently assigned out point.
<G>	Clears the currently selected segment.
<Z>	Allows the current segment on the timeline to be lifted.* (in MLT FX this toggles zoom levels).
<P>	Extends the end of a clip segment from its current position to the current timeline cursor position.*
<C>	Placing the timeline cursor on an edit point then pressing this key trims back 10 frames from this edit point. If the timeline cursor is placed elsewhere, pressing this key moves the edit point to the current timeline cursor position and trims from there.
<V>	Placing the timeline cursor on an edit point then pressing this key trims back 1 frame from this edit point. If the timeline cursor is placed elsewhere, pressing this key moves the edit point to the current timeline cursor position and trims from there.
<B>	Placing the timeline cursor on an edit point then pressing this key trims forward 1 frame from this edit point. If the timeline cursor is placed elsewhere, pressing this key moves the edit point to the current timeline cursor position and trims from there.
<N>	Placing the timeline cursor on an edit point then pressing this key trims forward 10 frames from this edit point. If the timeline cursor is placed elsewhere, pressing this key moves the edit point to the current timeline cursor position and trims from there.
< [>	Placing the timeline cursor after an edit point then pressing this key trims (ie 'tops') the start of the clip segment to the current frame.
<] >	Placing the timeline cursor before an edit point then pressing this key trims (ie 'tails') the end of the clip segment to the current frame.
<F2>	Displays/hides the paint palette which allows colours to be selected and mixed.

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Keyboard Shortcut	Function
<F8>	Shows/hides the optional one shot image corrector menu.*
<F9>	Selects Match Frame mode.*
<F5>, <Y>	Displays the Video Transition Menu that allows a cut, dissolve, wipe or custom transition to be selected.
<Alt>+<V>	Shows/hides voice over GUI functions.*
<Alt>+<B>	Starts/stops voice over recording.*
<Alt>+<S>	Opens the timeline **save** pop-up: press twice to save current clip to Clips Bin.
<Alt>+<X>	Closes the **save** pop-up without saving the clip.

Audio

Keyboard Shortcut	Function
< / >	Inserts an audio node.*
<F6>, <U>	Displays the Audio Transition Menu.*
<F7>	Displays the Audio Information Menu.*
<1>	Depending on focus, this toggles the timeline or Floating Clip audio track filter (A1) on/off.*
<2>	Depending on focus, this toggles the timeline or Floating Clip audio track filter (A2) on/off.*
<3>	Depending on focus, this toggles the timeline or Floating Clip audio track filter (A3) on/off.*
<4>	Depending on focus, this toggles the timeline or Floating Clip audio track filter (A4) on/off.*
<Scroll Lock >	Turns on the audio scrub play-out mode that changes the pitch of the audio to match the speed at which the clips are played or re-wound. With Scroll Lock turned off, audio snippet play-out mode is used.*
<Ctrl>+<A>	Depending on focus, this toggles the video and audio track filters on/off on the timeline or Floating Clip.*
<Alt>+<1>	Toggles the MLT FX timeline audio track filter (A1) on/off.
<Alt>+<2>	Toggles the MLT FX timeline audio track filter (A2) on/off.
<Alt>+<3>	Toggles the MLT FX timeline audio track filter (A3) on/off.
<Alt>+<4>	Toggles the MLT FX timeline audio track filter (A4) on/off.

Navigation & Playback

Keyboard Shortcut	Function
<Space Bar>	Starts/stops playing the clip edit currently on the timeline.
<→>	Steps the current frame position on the timeline clip forwards 1 frame.
<⇧>+<→>	Moves forward 10 frames.*

Keyboard Shortcut	Function
<Ctrl>+<→>	Moves forward 1 second.*
<Ctrl>+<⇧>+<→>	Jumps to last frame.*
<←>	Steps the current frame on the timeline clip backwards 1 frame.
<⇧>+<←>	Moves back 10 frames.*
<Ctrl>+<←>	Moves back 1 second.*
<Ctrl>+<⇧>+<←>	Jumps to first frame.*
<↓>, <S>, < ' >	Steps the current frame on the timeline to the next edit point (or next logged event)
<↑> ,<A>, < ; >	Steps the current frame on the timeline to the previous edit point (or previous logged event).
<J>, < , >	Plays the clip backwards from the current frame on the timeline. Repeated presses increase the speed by 1, 2, 4, 8, 16 or 32 frames.
<K>	Pauses the playing clip.
<L>, < . >	Plays the clip forwards from the current frame on the timeline. Repeated presses increase the speed by 1, 2, 4, 8, 16 or 32 frames.
<5>	Plays the clip forwards at normal speed.
<6>	Plays the clip forwards at normal speed from the current cursor position to the end of the current segement.
<7>	Jogs backwards 10 frames through the clip from the current frame on the timeline.
<8>	Jogs backwards 1 frame through the clip from the current frame on the timeline.
<9>	Jogs forwards 1 frame through the clip from the current frame on the timeline.
<0>	Jogs forwards 10 frames through the clip from the current frame on the timeline.
<Home>	Jumps to the first frame on the timeline.
<Page Up>	Zooms-in on the timeline around the current frame. Repeated presses increase the zoom.
<End>	Jumps to the last frame on the timeline.
<Page Down>	Zooms-out on the timeline around the current frame. Repeated presses decrease the zoom.

Undo & Redo

Keyboard Shortcut	Function
<Ctrl>+<Z>	undoes the last operation.
<Ctrl>+<R>	redoes the last operation that was undone.

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Bins

Keyboard Shortcut	Function
<Alt>+<←>	moves focus left on nested bins.
<Alt>+<→>	moves focus right on nested bins.
<Esc>	hides/shows all open bins on the desktop.
<F4>	refreshes the Server Bin.
<Ctrl>+<↑>, <↓>	selects next clip in bin.
<Ctrl>+<⇧>+<B>	switches focus to Server Bin.
<Ctrl>+<⇧>+<S>	selects Server Bin 'Areas' scroll box.
<Ctrl>+<⇧>+<T>	shows Server Bin clip naming pop-up (ie soft keyboard).
<Ctrl>+<Return>	shows the selected bin clip docked to the bin.
<Ctrl>+<⇧>+<Return>	shows selected bin clip docked to the bin as a flattened MLT with mixed down audio. *
<Ctrl>+<C>	copies a clip that is highlighted in the server bin to the local clips bin.

* Shortcut does not work when MLT FX is open.

Appendix C

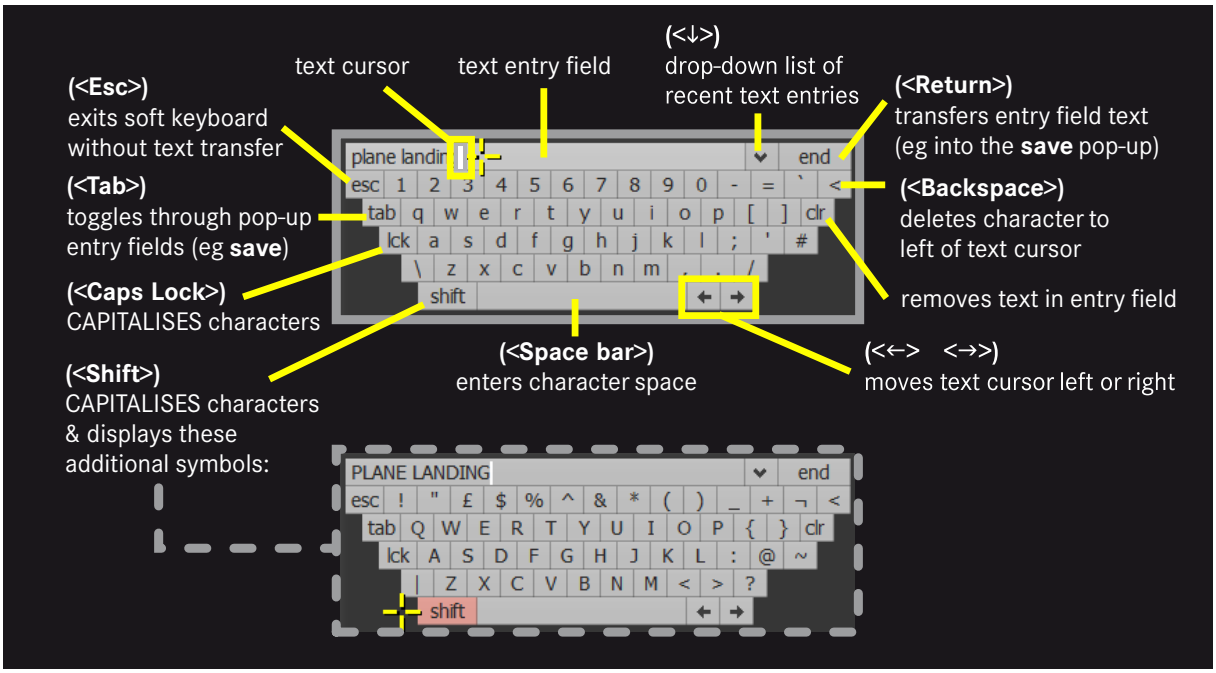
Menu Functions & Colours

In this guide, **bold** is used to indicate any GUI menu functions.

Boxes on the GUI are coloured to indicate individual function type and status:

pink — Pink boxes indicate enabled or selected functions. Most pink boxes toggle to grey.

grey — Dark grey boxes may indicate that the function is available but requires a video or key channel. Light grey boxes indicate disabled or non selected functions. Most of these boxes toggle to pink. Light grey is also used in blank fields that require text entry such as a name or category (eg the **save** pop-up). When a field is pressed, a soft keyboard appears allowing text to be entered:



The diagram above shows the soft keyboard functions with corresponding external keyboard functions in brackets.

orange — Orange boxes indicate that an operation has been aborted for the indicated reason, or a settings clash, such as resolution or frame rate etc. It also acts as a reminder to undertake an action, eg to perform a render or add a keyframe.

blue — Dark blue boxes contain information that cannot be changed such as a function name or description. Light blue boxes provide scroll lists containing alternative selections. Press on the box and while continuing to hold, move up or down the list until the required item is highlighted. Release pressure to select the item.

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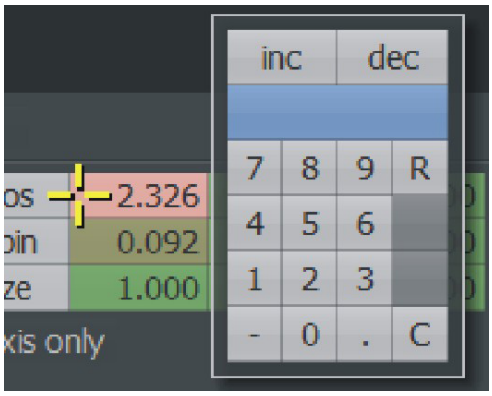
green

Green boxes indicate that a numeric value can be changed. If pressed, the box becomes pink and a numeric pop-up appears. When a change has been entered, the box becomes olive green to indicate this. Values can be changed by doing one of the following:



c Use the cursor to press the **inc** and **dec** boxes or the numbers on the pop-up. The new value appears in the blue box at the top of the pop-up. Tap on this box to transfer the value, then tap on it again to close the pop-up. If required, press the *C* box to clear the value, or the *R* box to reset the green numeric box to its default value.

d Enter a number on the external keyboard then press <Enter> to transfer the value and close the pop-up.

e Click and drag the cursor in a clockwise circular movement over a green numeric box to increase the value (you don't have to click the box first to display the pop-up) or an anti-clockwise movement to decrease it. You can also drag up or down to increase or decrease the value.

Specific numeric values can be entered using the following external keyboard shortcuts:

Keyboard Shortcut	Function
<B>	Inserts the biggest allowed value for the selected parameter
<S>	Inserts the smallest allowed value for the selected parameter
<D>	Inserts the default value for the selected parameter
<Space>	Inserts a zero value into the selected parameter.

Mouse & Pen Functions

Right-click or <Alt> + Tap

By default throughout this manual, it is assumed that the mouse is being used to control the cursor. If the right-click of the mouse is referred to, pen and tablet users should press <Alt> on the keyboard and tap with the pen.

Undo & Redo

The system stores the individual actions that have been performed in the Edit Application in an undo buffer. The previous actions can be selected from a list and then undone.

Selecting the **undo** box on the bottom-left of the menu area undoes the most recent action performed. Clicking and holding this box displays the other actions that have been performed. Slide to the required action and let go of the cursor. The box should now display the selected action to be undone. Click this box to undo the action (or press <Ctrl>+<Z> on the keyboard). You can redo an action by pressing <Ctrl>+<R>. A **redo** list also appears when you click and hold **undo.**

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